CIVILIZATION®

INTRODUCTION	1
CITIES AND CIVILIZATION	3
BEFORE YOU START	8
INTERFACE INTRODUCTION	10
PRE-GAME OPTIONS	14
CIVILIZATION TUTORIAL	18
THE GAME TURN	37
ENDING THE GAME AND WINNING	42
CITIES	47
THE CITY DISPLAY	57
CITY IMPROVEMENTS	71
WONDERS OF THE WORLD	76
DISASTERS	84
THE WORLD	85
THE MAP DISPLAY	89
SETTLERS, SOLDIERS, AND ENVOYS	97
GOVERNMENTS	112
ADVISORS/WORLD REPORTS	116
CIVILOPEDIA	122
PLANETARY CARETAKING	123

DIPLOMACY 127

THE SPACE RACE 130

ADDITIONAL NOTES 134

PLAYERS NOTES 139

DESIGNERS' NOTES 145

COPY PROTECTION 148

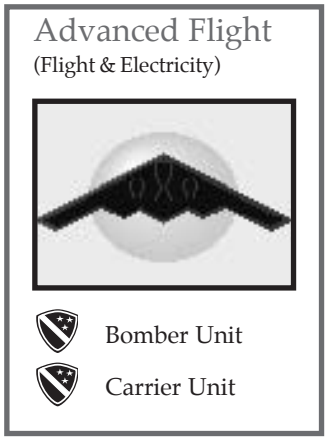
CREDITS 154

CUSTOMER SERVICE 156

INTRODUCTION

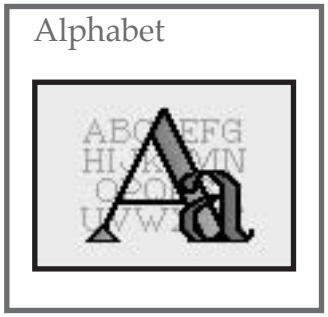
Civilization casts you in the role of the ruler of an entire civilization through many generations, from the founding of the world's first cities 6,000 years in the past to the imminent colonization of space. It combines the forces that have shaped history and the evolution of technology in a competitive environment. You have great flexibility in your plans and strategies, but to survive you must successfully respond to the forces that have historically shaped the past.

When play begins, your civilization is small and requires only a few decisions each turn. But each decision can have important ramifications later. A number of innovative displays makes it easy to understand the issues and implement action. If you prove an able ruler, your civilization grows larger and even more interesting to manage. Inevitable contact with neighbors opens new doors of opportunity: treaties, embassies, sabotage, trade, and war.



As time passes, the number of important decisions required each turn increases. First you must think tactically: location of cities, production of military units or city improvements, and exploration of the immediately surrounding lands. Soon, strategic plans must be formulated: war or peace with immediate neighbors, when to explore and expand overseas, when to change your type of government, and where to focus technological research.

The success of the civilization that you build depends upon your decisions. As ruler, you manage the economy, diplomacy, explorations, technology research, and war machine. Your policies must be flexible in an evolving world. Military units inevitably become obsolete and need replacement as more advanced technologies appear. The balance of power among your rivals can shift. Economic and governmental policies may have to be modified, lest you fall behind in critical technologies.

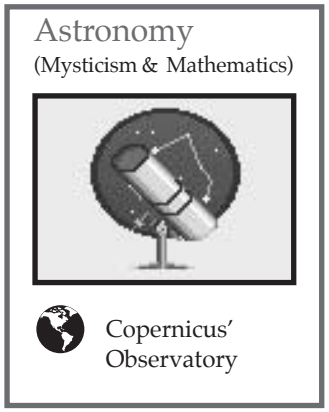


The past civilizations of Alexander the Great, the Hittites, Napoleon, Genghis Khan, and others all held pride of place on the world's stage at one time, but all eventually collapsed. You are challenged in Civilization to build an empire that stands the test of time. You may succeed where your predecessors failed. If you locate cities properly, build them soundly, defend them aggressively, and neutralize the danger from potential enemies, the descendants of your tribe may not only survive, but lead the colonization of space.

CITIES AND CIVILIZATIONS

Civilizations appeared when agriculture and technology developed to the point where humankind could gather and live in cities. With only part of the population needed to provide food for all, the rest could afford to specialize in the tool making, trading, engineering, and managing that urbanization made possible. Specialization improved efficiency and production. Cities encouraged a rapid exchange of ideas. A teacher could reach many students at once, not just a few.

City residents cultivated the nearby fields, logged the forests, and gathered fish from the rivers, returning each night with the results of their labor. This produce and raw material was bartered in the city markets for the goods and services of others. Charcoal from one area and iron ore from another might be taken to the town smelter who made the iron that the blacksmith turned into tools.



But cities developed unique problems. As they grew in size it became more difficult to provide sufficient food from nearby farmland. Overcrowding, menial jobs, and living conditions often led to unrest among the poorer citizens. Prosperous cities became tempting targets for rival civilizations and barbarian invaders. Cities and civilizations that developed better management and new solutions to these problems grew and prospered. Those that failed have left their ruins around the world as warnings.

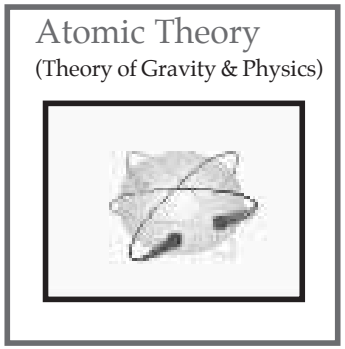
In *Civilization*, as in history, a key step and a fundamental concept is the founding and management of cities. The civilization that you are to rule begins as a prehistoric wandering tribe that has just reached that critical point where it is capable of building cities. The first step is to build one city and from there expand. As your civilization grows, cities will spread over an entire continent, or part of a continent, or over several islands and continents.

Each city acts as a giant processing plant for the food, resources, and trade of the adjacent lands. The people of a city go out and work the nearby farmland, mines, and forests, and the city converts the result of their labor into more

people, armies, cash, luxury goods, temples, universities, etc. Raw materials are transformed by cities into the power and the ideas your civilization needs to prosper.

Food that is collected feeds the local population. When there is a food surplus the population grows. Your first city has a small population that can only work part of the lands the city controls. As the city population grows, more lands can be worked, increasing production. Before long you can afford to send off settlers from the first city to build another nearby, and then another.

Resources are the lumber, metals, energy sources, and other raw materials that are used in industry. Through the craftsmen and shops of the city these resources are made into items useful at home or elsewhere in your civilization. Larger cities normally generate more resources and thus build things faster. Each city can build only one item at a time. This could be a military unit such as a Phalanx or Battleship, a city improvement such as a Temple or University, or perhaps a Wonder of the World.



Trade is generated by the highways of commerce: roads, rivers, and oceans. All nearby trade passes through the city bringing in luxury goods, cash, and new ideas. Your policies can adjust how trade is divided among luxury goods, cash, or research. There may be times when a city requires more luxury goods to make more people happy, or times when more tax revenues are needed in the treasury. Higher taxes generate more revenue.

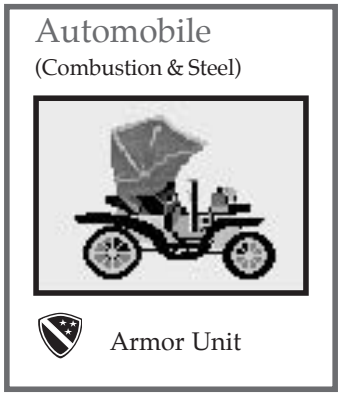
As your cities grow they may require more care in keeping them productive. Large cities are desirable for production, but have inherent problems. A critical problem you must deal with is the happiness of the population. The people can range from happy, to content, to unhappy. Having too many unhappy people may lead to revolt.

Luxury goods make people happy but may mean fewer tax revenues or a reduced flow of technology. By adjusting the flow of luxuries, changing types of government, building city improvements, instituting martial law, and other means, it is possible to keep even the largest city happy and productive.

Technology, like the founding and management of cities, is a second concept fundamental to Civilization. To make the transition from wandering hunter-gatherers to city dwellers, humankind had to possess some essential knowledge and skills. To advance beyond the first stages of city dwelling requires a corresponding advance
in knowledge.

At the start of Civilization, with your tribe poised on the threshold of history, the people already possess some basic knowledge. They understand agriculture, irrigation, construction of roads, and the construction of homes and other buildings. But this isn't enough knowledge to survive through the coming ages. Learning new technologies opens the door to new abilities. A small island-bound civilization that learns Map Making can now build ships and expand overseas.

The time it takes to acquire new technology depends on how much of your trade is allotted to new ideas. You must choose between luxuries that make the people happy, cash for the treasury, and technology research. The more trade allocated to this research, the faster the next step is acquired. When enough research has been done, your civilization acquires the new technology and can begin working on something new.



The world where your civilization exists is mostly unknown to you, a mystery except in the immediate vicinity. To find out more about it you must explore. Not only is the world hidden, but also unknown are the locations of other civilizations.

Other civilizations, especially those nearby, complicate your tasks as ruler. Each of these civilizations, ruled by one of your peers, will be competing for the same resources and opportunities as you. Your competitors are also looking to expand and grow; at your expense if given the chance. Once contact is made, you can no longer concentrate solely on the growth and expansion of your civilization. Now you must assess the strength of rivals, adequately provide for the defense of your cities in case of war, or consider making war yourself.

Successful wars can be very useful. Capturing cities is much easier than building them up from nothing, and may provide loot in stolen technology and cash. Weakening rivals reduces the threat they pose. However, long, costly wars may allow neutral civilizations to expand and grow in strength while you spend resources on arms.

To explore the unknown and contend with your rivals for the world, you can build armies, navies, and other special units in your cities. Once an army or naval unit has been built, it is available for movement and combat. These units extend the power of your civilization around the world. When they enter hidden areas of the world, the shroud of mystery is removed and that area becomes known. In this way you uncover the world, finding suitable areas for new cities and eventually making contact with other civilizations.

Three special units are available that can be useful to you as ruler. Settlers are groups of your citizens who serve as pioneers. They may found new cities and also build terrain improvements such as roads, irrigation, and mines that increase the productivity of your cities. Diplomats are your emissaries and spies. They can establish embassies with rivals and also perform a number of cloak and dagger tasks. Caravans are bands of merchants that transport the produce of your cities around the world to other cities, bringing in cash and establishing trade routes. Trade routes increase the trade of the home city, resulting in more cash, luxuries, and technology.

Wonders of the World are unique city improvements, usually structures, that can only be built once in the entire world. Once a particular Wonder is built by a city, no other city can build one. Each Wonder brings glory to the civilization owning it, and some unique tangible benefit as well. For example, if one of your cities builds the Oracle, then all of the Temples throughout your civilization become twice as effective in making the people content.

The fundamental concepts for a successful civilization are the expansion and growth of your cities, and the acquisition of new technology. In a word, you must grow. In this dynamic world environment, surrounded by rivals in unknown

corners, there is no future in complacency and stagnation. You must press forward on all three fronts: spread your cities out to claim a significant share of the world, increase the size and production of each city, and strive to acquire the latest technology.

Your civilization cannot afford to lag too far behind your rivals in any one of these three spheres. A sufficient number of powerful cities can maintain the quantity of your military in any arms race. Keeping abreast of technology insures the quality.

The Hittites of antiquity had a brief moment of glory because the technology of their weapons was superior to that of their neighbors. But those neighbors had much larger populations, and when they acquired the same new technology, the Hittites were ushered off the world's stage.

Cortez landed at the Aztec city of Vera Cruz with only a few hundred conquistadors, but with the aid of superior weapons and diplomacy, he soon had Montezuma crying in his chocolate. The Aztecs were deposed before they could learn the technology of the Spanish.

Do what you can to keep your civilization growing in every area. More and larger cities, better technology, and better armies mean survival. Each city must be planned, managed, and protected so that it contributes to the power and glory of your civilization.

By maintaining this pattern of growth over the years, you have the best chance of avoiding the fate of the Hittites and Montezuma.

BEFORE YOU START

Sorting the Materials

This manual provides detailed instructions on how to play Civilization and provides background information on the topic of the game. The manual applies to all computer systems, but specific references are given for use with an IBM system operating under either DOS, for which the game was first designed, or Windows, and the Macintosh. Throughout the manual, the discussion about interface controls assumes that the player has a mouse. A keyboard-only IBM interface is included in the DOS version and is discussed in the Technical Supplement for that product.

The Technical Supplement gives specific instructions for loading and/or installing the game onto your computer. It also provides a reference of keys used in the game specific to each computer system.

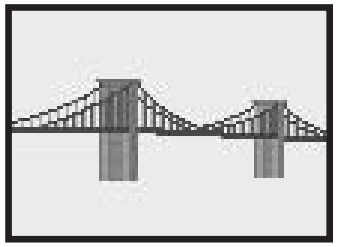
Installation

The Technical Supplement for each version of Civilization has complete information about how to install the game onto either floppy or hard disks.

Learning the Game

Study Method: Study the actual controls and instructions in this manual and in the Technical Supplement. Now begin play and refer back to the instructions as needed.

Bridge Building
(Construction &
Iron Working)



The Tutorial: See (Civilization Tutorial) on how to play Civilization. First time players and those with a minimum of experience playing games on computers may find it useful to start the game according to the instructions for the Tutorial and then carry on from there. The Tutorial describes a game from the Windows version, but players of other versions should be able to follow the discussion easily.

Jump Right In Method: This is the most popular way to learn among experienced computer game players. We recommend you at least read through Chapter One, especially the sections Cities and Civilizations, Interface Introduction, the Tutorial, and Ending the Game and Winning, but even this is not necessary. Refer to the manual's instructions for help when problems arise.

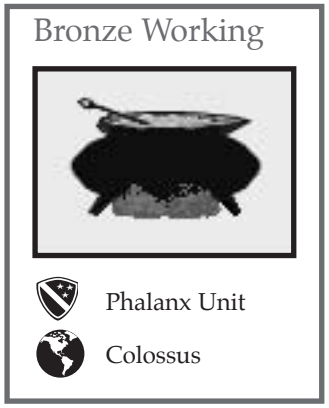
Windows Help File: The Windows version of Civilization includes an On-line Help file which briefly explains many of the major aspects of the game, as well as a brief tutorial.

INTERFACE INTRODUCTION

Civilization was originally developed on an IBM/DOS system, but has been redesigned for other systems including Windows and the Macintosh. The following discussion of the interface is specific for the DOS and Windows versions. Macintosh users should find that the Windows version is almost identical to theirs. Refer to the Technical Supplement for a description of any additional interface features specific
to each version.

The interface of Civilization is designed to take advantage of the mouse. The IBM/DOS version may be played with a keyboard-only interface, but play is faster if you have a mouse available. (The IBM keyboard-only interface is discussed in the Technical Supplement for the DOS version.)

The interface operates mainly through two game displays: the map display and the city display. Each of these displays is described in detail in its own manual section. Across the top of the map display is a menu bar. From the menus available here you can reach additional game functions and information not available from the displays. This menu bar is also available in the Windows and Macintosh versions when the city display is open.



The interface relies heavily on menus that are all used in a similar manner. Labeled buttons are also used in several places to enact commands, choose between options, or reach further information.

Using the Mouse: To click the mouse on some part of the game, move the torch that is the pointer onto the desired location and click the correct mouse button.

The IBM mouse has two buttons and the interface makes a distinction between them. The left mouse button (LMB) is used to perform actions such as scrolling the map or activating a unit. The right mouse button (RMB) is used to obtain information. For example, click the RMB on a map square for a description of the square's geography.

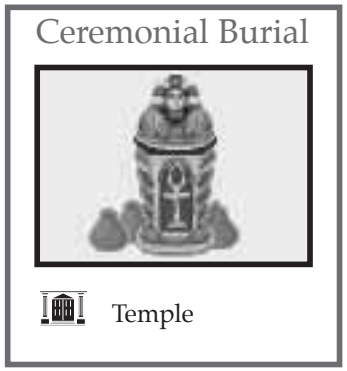
Depending on circumstances, the Windows mouse pointer may change into a direction arrow indicating where a game playing piece will move on the map if the mouse is clicked. The Windows pointer also changes into an hour glass when the program is busy.

Opening Menus: Throughout the manual you are instructed to pull down menus to open them up and reveal the options they contain. To open a menu using the mouse, place the mouse pointer on the name of the menu in the menu bar and press the LMB. If you click the button the menu opens and stays open. Alternatively, you can press and hold the button, and then drag the pointer down the list of menu options.

In the Windows version of Civilization, the menu bar may be selected by pressing the Alt key. Then, individual menus may be opened by pressing the key for the underlined letter in each menu name. For example, at the map display note that the letter A is underlined in the name of the Advisors menu. To open the Advisors menu, press the Alt key and then the A key.

When playing with the DOS keyboard-only interface, a shortcut key can be used
to open the menus of the menu bar. For a list of these shortcut keys, see the Technical Supplement.

Menu Choices: Menu options can be selected a variety of ways. The most common is to choose a menu option, place the mouse pointer on your selection and click the LMB.



Alternatively, if you open a menu and simultaneously drag the mouse pointer down, the options are highlighted individually as you pass over them. When the option you wish is highlighted, release the mouse button to make your selection.

You may also use the keyboard to make menu selections. Use either the keypad 8 and 2 keys or the up and down arrow keys to move the highlight bar through the menu. When your choice is highlighted, press the enter key to make your selection.

In the Windows version, selected menu options may also be chosen by clicking on the "OK" button.

Pushing Buttons: To push any labeled button in the DOS version or any command button in the Windows version, click on it with the LMB.

In the Windows version, option buttons often appear in dialog boxes. Option buttons represent mutually exclusive options. You can select only one option at a time by clicking on the button with the mouse or by using the arrow keys. The selected option button contains a black dot. When the option you wish is selected, press the OK button or press the Enter key.

Shortcut Keys: For a number of commonly used commands, shortcut keys have been provided to bypass menus and save several steps. A shortcut key is listed to the right of an option's name on many of the game menus. For example, on the Orders menu a Settlers unit has the option of founding a new city. Instead of selecting this option from the menu, you can press the B key which is the shortcut key for this command. These shortcut keys are listed in the Technical Supplement for each version.

Map Interface

The map interface is explained in detail in the manual section, (The Map Display). However, a few important commands are included here to help you get started.

Map Windows: In the Windows version, the map display is now in three parts and each is a functioning window. The world and map window are separate, while the palace, status, and unit identification windows are combined into one status window. Within limits, these windows may be sized, dragged, scrolled, and closed.

Each of these windows may be closed from the Edit menu or by using the respective "close" box (Control menu box). Once closed, these windows may be opened only from the Edit menu.

When the game begins, the three menus are sized to fit your monitor. The world and status windows may not be enlarged beyond this size, but may be reduced. If your monitor has a large screen, you can increase the size of the map window. Be aware, however, that the larger you make the map window, the more processing time is needed for each map update and this may slow the game

considerably. If you do not have enough memory to support the enlargement you wish, the program limits the map to the appropriate maximum size.

The program remembers your settings from session to session. For example, if you increase the size of the map window and minimize the size of the world and status windows, the game starts that way the next time you play. This is true whether you load a saved game or start a new game.

Map Scrolling: Click the LMB on any map square to center it in the display. Click the LMB on any part of the world map in the world window to center the map display on that part of the world.

In the Windows version, the map window scroll bars work normally except for one feature. The horizontal slider (the scroll box on the horizontal scroll bar at the bottom of the window) always resets to the middle of the scroll bar. This happens because the world wraps continuously to the left and right.

Current Unit: The unit on the map that is blinking is the current unit that is waiting for you to give it orders. It can be moved by using the keypad number keys corresponding to the map direction you wish it to move. In the Windows version, when the mouse pointer is placed on the edge of the blinking unit the pointer changes into a direction arrow. If you click the LMB while the pointer is a direction arrow, the unit moves one map square in that direction.

City Display Interface

The city display interface is explained in detail in the manual section, The City Display, page 51. A few important commands are included below.

Opening/Closing City Display: Click the LMB on a city on the map to open its city display. Push the exit button to close the display and return to the map.

Production: For the DOS version, press the Change button above the production box to open the Production menu which lists items that can be built. For the Windows version, open this menu by choosing "Change Production", found in the City menu on the menu bar. For either version, the C key is the shortcut key to open the Production menu. You can also double click on the name or icon of the item being produced currently to open the Production menu. The city display must be open for the C key to work.

PRE-GAME OPTIONS

The beginning of Civilization requires you to make a number of choices regarding the parameters and world of the game you wish to play. To start, follow the instructions in the Technical Supplement for booting the game. After the title and credits appear, you proceed to the selection of the following pre-game options.

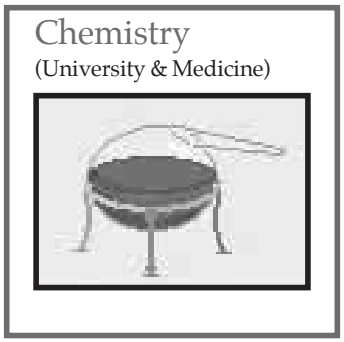
For the IBM/DOS version, you may skip past the title and credit screens, and directly choose the type of game you wish to play by using shortcut keys discussed at the end of this section.

Game/World Options

From the Pre-Game Options menu, choose which game to load:

Start a New Game: When this option is chosen, a new game begins on a unique, program generated world that resembles the Earth in land mass, climate, and rainfall. The new game begins in 4000 BC.

Load a Saved Game: Choose this option to load a previously saved game. For the Windows version, an "Open" dialog box opens that lists all of the saved games available in this directory. Choose the game you wish to load. You may switch directories to locate other saved games.



Civilization for Windows allows you to load saved games from the Macintosh version, and vice versa. To transfer a saved game file from the Macintosh, use the Apple File Exchange program (included with earlier versions of the Mac operating system) or use MAC-PC Exchange (a commercially available utility) to copy the file to an IBM diskette. Use the opposite procedure to transfer a Windows saved game to the Mac.

To load a saved game in the DOS version, enter the letter of the drive containing your saved games and press the Enter key. When the list of saved games appears, select the game you wish to load with the keypad or arrow keys and then press the Enter key.

Play on EARTH: Choose this option to play on Earth. Your rivals are tribes placed in their historical locations.

Customize World: Choose this option to adjust your game world as you wish. From the menus that appear, choose an amount of land mass, average temperatures, amount of moisture, and starting date. The middle option of each menu is the default Earth-like world.

View Hall of Fame: Choose this option to open the Hall of Fame. After viewing the Hall of Fame you return to the Game/World Option menu.

Setting The Stage

When starting a new game, regardless of where, a presentation of the planet's history is shown while the world is generated. You can clear the screen to skip this story (press the Enter key), but it may take some time anyway to generate the new world.

Difficulty Levels

Choose the level of difficulty at which you wish to play when starting a new game. A number of factors are adjusted at each level, including the time it takes to produce new things, barbarian strengths, the pace of technological advancement, and the default turn when the game ends.

Chieftain: This is the easiest level and is recommended for first-time players. The program provides advice when the player must make decisions.

Warlord: Your rivals are somewhat tougher and technology takes longer to acquire. This is for the occasional player who doesn't want too difficult a test.

Prince: Your rivals are substantially tougher and technology comes much slower. You will need some experience and skill to win at this level.

King: Your rivals are most evenly matched with you in capability. Experienced and skilled players will play most of their games at this level as it is a strong challenge with victory far from foregone.

Emperor: This is the most difficult level and is only for those who feel the need to be humbled. This level can be won, but not consistently.

Level Of Competition

Choose between 3 and 7 civilizations in the world. More opponents is not necessarily more dangerous. The fewer your opponents, the more time you have to peaceably expand and develop before encountering rivals. More opponents means earlier contact and the risk of war. But contact with other civilizations offers the opportunities of trade, alliances, and the spoils of war.

Select Your Tribe

Select your tribe from the menu of options. The location of your first unit and the proximity of rivals is determined randomly, except on Earth. In this case the civilizations are chosen somewhat randomly, but those chosen do start near their historic locale.

Pick Your Tribe

In Civilization for Windows and Macintosh, choosing the option "Custom Tribe" allows you to create any name for your tribe instead of choosing one of those already included in the game. Type in the name you wish and press the Enter key. The name can have ten letters or less and should be plural, such as "Scots," "Franks," or "Hittites," so that the game text reads correctly. Thereafter, your civilization is known by this name.

In Civilization for DOS, you can also customize your tribe. When the Select Your Tribe menu appears, press the Escape key. Now type in the name you wish and press the Enter key to accept it.

Your Name

Type in a suitably impressive name for yourself that contains no more than 14 letters. Accept the name when you have finished typing it by pressing the Enter key. The program will a suggest a name that you can accept if you can't think of something better.

IBM/DOS Shortcut Keys

While the credits screens are being displayed, you may press shortcut keys to immediately choose which type of game you wish to play. Press one of the following keys to immediately start the correct game. Any other key takes you to the game
choice menu.

New Game:	N key
Load Saved Game:	L key
Earth:	E key
Custom World:	C key

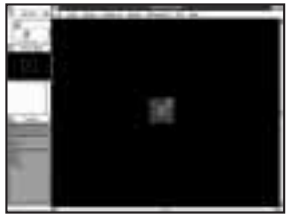
If you select "Start New Game" or "Custom World", the program creates a new world. While this proceeds, the Evolution sequence is displayed (In the beginning ...). If you press a key during the Evolution sequence, the sequence is terminated as soon as the new world has been completed. This may take some time, especially on slow systems.

CIVILIZATION TUTORIAL

This tutorial describes playing Civilization in the Windows version. Because this is so close to the Macintosh version, players of both should be able to easily follow the discussion. Owners of the IBM/DOS version will find that their game is slightly different in look and play, but close enough that the tutorial should not be difficult to learn from.

Getting Started

Windows Map Display



Click on the Civilization icon to load the game and then watch the various title screens. To skip the title screens, press the Enter key. This speeds the loading process but it still takes some time. When the game is loaded, the Pre-Game Options menu appears. For purposes of this tutorial, choose the option "Play on Earth." As you play, you should be able to recognize the part of the Earth you occupy.

A series of additional menus then appear. Make the following choices, in order, to start a game for the tutorial:

Code of Laws
(Alphabet)

Courthouse

Difficulty Level: Chieftain (the easiest level)

Level of Competition: 3 Civilizations (the lowest number that you can choose)

Pick your tribe: Choose any named tribe

Your Name: (type in your name, and then press Enter)

Having made these choices, the game begins.

Looking Around

When the new game begins, you are looking at the large map display window and two smaller windows to its side: the world window and the status window. Across the top of the world window is a menu bar listing a number of menus that you can open.

While playing Civilization, you spend most of your time looking at the map display. This is where you direct and watch the movement and combat of your

game playing pieces, called units. The blinking rectangle that looks like a covered wagon in the center of the world display is your first unit, a Settlers unit. Units of many different types may eventually be available to you and they can perform a number of different actions. For example, pull down the Orders menu from the menu bar to see the various orders that you can give to your Settlers unit. Don't give the unit any orders yet. The Settlers unit is your tribe. It is on the verge of forming its first city and converting from a group of nomadic wanderers into a civilization.

Windows City Display

The world map is almost entirely black. This is because your tribe knows almost nothing about its world. You don't know the extent of the continent you are on, the extent of the seas, or the whereabouts of other tribes and civilizations. As you continue to play, you may learn these things. When units move around the map they discover new lands and seas. When this happens, the black covering is pulled back from the map to reveal what geography is actually present.

Combustion
(Refining & Explosives)

Cruiser Unit

The small world window shows the entire world of your game. The white rectangular box in this window shows the exact part of the world which is now visible in the large map display. When you begin a new game, the small world window, like the large map display, is almost entirely black. As your units move around and discover new areas, more of the world will become visible in both of these windows.

The status window reports information of various kinds about your civilization. Most of it can be ignored for now. The lower part of the status window reports the following information about your Settlers unit, which is currently active and waiting to be given orders (blinking): your tribe's name, the type of unit that is active, how many movement points the unit has left to spend, its home city (none in the case of your first Settlers unit), and the type of terrain it occupies.

The immediate goal of your civilization is to found its first city. Rather than do any exploring or agricultural/industrial/road improvements, get that first city started right away. Your Settlers begin the game in one of three types of terrain square: Grasslands, Plains, or River. Regardless of which it is, start the new city where the Settlers are. Pull down the Orders menu and choose the option "Found New City" or press the shortcut key for this command, the B key (CMD + B keys for the Macintosh version). You are asked immediately to choose the name of the city. Accept the one the program proposes or type in a name of your own. An animation portrays the arrival of your Settlers at the city site, and their conversion into citizens living in the huts of the new city. When you build your first city, the Settlers unit disappears. The people of your tribe who made up that unit become the first citizens of the city.

Your First City

The founding of the city opens the city display. This is the second most important display in the game. From it you manage what the city produces and how it grows. This display and cities themselves are discussed in more detail in Chapter 2.

When your first city is built, it has a population of one point. These people can be seen on the city display in the population roster represented by one figure. Later in the game more figures will appear here if your city grows. Click on the Exit button in the center of the city display to close it and return to the map display. Note that your city has the number "1" on it, reporting that it has a population of one. Click the LMB on the city square to reopen the city display.

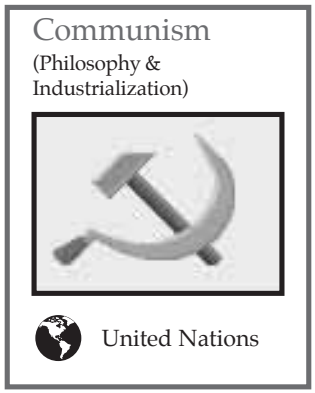
The city display is divided into several parts, each of which provides important information about some function of the city. From this display you can quickly learn how many people are in the city, what raw materials it is harvesting (food, resources, trade), how incoming trade is apportioned (by percentage into luxuries, tax, and scientific research), what units are supplied from here, how much food is in storage, where the citizens are working in the nearby countryside, what improvements have been made to the city, and what the city is producing. These parts can be seen in the accompanying illustration of the city display (see The City Display).

Only a few parts of the city display need to be understood immediately: the city map, which shows where the people are working outside the city to harvest raw

materials, the food storage box, where excess food production is stored, and the production box, which shows what unit or improvement the city is producing. These parts of the city display are discussed in following sections of the tutorial.

Pull down the City menu from the menu bar. The options on this menu are all things you can do or examine while you have a city display open. These options are not available unless a city display is open. The options available can be ignored for now or you can briefly experiment with their function. Most are not relevant to an introductory tutorial so they are discussed later in Chapter 2.

The City Map



The map at the top center of the city display shows the 20 world map squares surrounding the city that are within the city's radius and thus available to be harvested by the people of the city. Squares that have not been discovered (they remain black) or that are being harvested by another nearby city (they are bordered by a red box) are not available. The people of the city may be put to work on available surrounding map squares to harvest food, resources, and trade. These are the raw materials of your civilization from which will come all future people, cities, units, improvements, money, luxuries, and scientific research. How much of each raw material is obtained depends mainly on the type of terrain in the square being harvested.

Your first city has a population of only one point, severely limiting how much can be harvested. With a population of one, the city can harvest a maximum of two squares: the city square itself and one additional square. The city square is always harvested. However, you have discretion over which additional squares are harvested.

When the city is founded, the program assigns your one population point to a square on the city map automatically. The program chooses the square it thinks most useful to you. It chooses first on the basis of maximum food production, then maximum resource production, and then maximum trade production. But you are not required to accept the program's choice. You may move your people to any square on the city map.

Look on the city map for the square outside the city that contains the symbols for food(wheat stalks), resources (shields), and trade (double arrows). These symbols may not all be present, but food should be at the minimum. This is the square where the city's people are working. Click on this city map square with the LMB and the harvest symbols disappear. The people have been taken away from the square and have temporarily suspended their harvesting. Look at the population roster and see where the single figure has been replaced by an Entertainer. This is a type of Specialist that you can ignore for now. All specialists are discussed in Chapter 2.

Point to any other available city map square and click on it with the LMB. The people are put back to work there and the symbols representing the harvest reappear. Look at the city resource window in the city display to see what the new harvest is for the city. Try moving your people around from square to square and watch how the harvest changes as they are put to work on the various types of terrain.

At first, the harvest from the various terrain squares is somewhat limited. Harvests can be improved later in many cases by improvements made to map squares by Settlers units, which also serve as your construction engineers. Settlers improvements can upgrade agriculture (may increase food), industry (may increase resources), and transportation (roads and railroads speed movement and may increase trade, but railroads are not available until the proper technology has been acquired). Note that your city square is already improved with roads and irrigation (an agricultural improvement).

Settlers may also convert certain types of squares into other more productive or desirable square types. For example, a Swamp square which has a small food harvest may be converted into Grasslands which is a great food producing terrain. For more information about these improvements, see Settlers.

The harvest from individual squares may also be improved by other types of government for your civilization, but changing governments is not practical for a new civilization. The types of governments and their effects are discussed in Chapter 3.

Choose which map square you wish to leave the city's people working on. We recommend that they be placed to maximize production of food, represented by the wheat stalk symbols.

Food Storage

If you maximize food production for your new city, you should produce a surplus of food. Look at the row of food symbols in the city resources window of the city display. A food surplus is noted by a break in the row of food symbols. Food to the left of the break is required to maintain the city's population. Food to the right of the break is a surplus. Each game turn, surplus food harvests are placed in the food storage box of the city display, where they accumulate. When the food storage box fills up, the city's population grows by one point and the food storage box empties. Next turn the box begins to fill again. In this way, surplus food is converted into more people.

When a city's population grows, several things happen. The population roster on the city display increases by one figure, representing the new people. On the world map, the number on the city square increases by one. On the city map, people are put to work on an additional square, increasing the city's harvest. Population growth may mean more food and/or resources and/or trade, depending on where the new people are put to work. Population growth probably doesn't mean a larger food surplus because the new people are likely to produce just enough food to feed themselves.

The relationship between the accumulation of food surpluses and the growth of city population is one of the key concepts in understanding how to play Civilization. City growth is important because larger cities are usually more productive, efficient, and resilient.

City Production

Each city may produce one unit or improvement at a time. Units are the playing pieces of Civilization that move about the map, explore, and engage in combat. Improvements are buildings and Wonders of the World that can be built inside your cities to enhance their production, efficiency, and growth. The item currently being produced by your city is named or marked in the production box of the city display.

Look at the number of resource symbols (shields) in the second row of the city display's city resources window. These shields represent the industrial resources harvested by your city that can be turned into new units or city improvements.

Surplus resources are placed into the production box each turn. Your first city should have surplus resources for at least several turns. When the box fills, the item being produced is completed. If a unit is produced, it appears on the world map, ready to be moved or to be given other orders. If an improvement is produced, it is added to the city. Improvements that exist in a city are listed in the improvements roster of the city display.

The Production Menu

For your newly founded city, the production box is set automatically to produce a Militia unit. This is a weak, but inexpensive, military unit that can be produced quickly. To see what alternative units or improvements could be produced instead, click on the icon of the Militia unit or choose "Change Production" from the City menu. Either of these actions opens the Production menu that shows all of the units and improvements that your civilization has the ability to produce. As time passes and your civilization makes progress, you gain the ability to make additional types of units and improvements.

To learn about the different units and improvements, select a name and click on the Help button. For the IBM/DOS version, press the Alt + H keys. This opens the Civilopedia entry about the item that tells what it costs and what it does.

We recommend that you continue producing the Militia unit.

The First Few Game Turns

Exit from the city display to return to the map. Look at the status window. There should be a message blinking there that says "End of Turn." Additional instructions say "Press Return to Continue." This is the end of turn message that appears at the end of any turn during which you have no active units. This flag on the end of a game turn allows you to consider any additional actions before going on to the next turn.

Press the Return key to advance the turn. Note that the date in the status window changes at the start of the next turn. Because you have no units to move at this time, the end of turn message appears again. Press the Return key to advance the turn and continue doing so each turn until your first Militia unit is

built. When this happens, the Militia unit appears in the same square as the city that built it. When a new unit appears, it is usually wise to open the city display and consider changing production. For now, however, leave production alone and start producing a second Militia unit.

The new Militia unit blinks, waiting for orders. While it is blinking, look at the status window. Note the additional information now found there. The name of your first city indicates that it is the home city of the Militia unit. The terrain of the city square is named, and note that the square has roads and irrigation.

Press the 8 key on the numeric keypad to move the Militia unit one square to the north. Alternatively, move the mouse pointer onto the top half of the Militia unit. The pointer should turn into an arrow pointing to the square due north. While the pointer points north, click once. The Militia unit moves one square north in either case.

Moving the Militia unit into a new square reveals the terrain of three new squares to which the unit is now adjacent. These specific squares are all within the radius of your first city. Click on the city to open the city display and see that the three newly revealed squares are now available for harvests on the city map. If one of the new squares is a better source of raw materials than the one you are currently harvesting, move the people there.

Moving the Militia unit automatically ends your turn. The end of turn message does not appear because you had a unit active during the turn. If you wish, you can have the end of turn message appear after every turn. Pull down the File menu and choose "Options." From the Options menu, choose "End of Turn." A check mark appears next to this option to note that it is toggled on. Now the end of turn message appears after each turn. If this message becomes annoying, go back to the File menu and toggle it off.

In the next three turns, move the Militia unit one square to the southeast (press the 3 keypad key), then one square to the southwest (press the 1 keypad key), and then one square to the northwest (the 7 keypad key). Moving to these four squares around the city reveals completely the terrain on the city map.

Now begin moving the Militia unit farther away from the city to explore the continent you are on. Exploration is discussed in the next section.

While your first Militia unit explores, your city may grow in population and eventually a second Militia unit is finished. When the second Militia unit appears, click on the city's square to open the city display.

Two Militia units are sufficient for the time being. One can explore while the second defends the city. Pull down the City menu and choose the option "Change Production". Alternatively, click on the icon of the Militia unit. Either action opens the Production menu that shows what types of units or improvements can be built by your city. Any of the following items are good choices now if available: Barracks (to build veteran units), Settlers (to build roads, irrigate land, or found a second city), Cavalry unit (use its movement factor of 2 to explore- requires technology of Horseback Riding), or Granary (speeds city population growth- requires technology of Pottery). Change production to build a Settlers unit. Expansion is a high priority and this Settlers unit will be used to found a second city. After making this production change, exit the city display.

Back at the map display, give the new Militia unit orders to fortify in the city. To fortify the unit, pull down the Orders menu and choose "Fortify" or press the F key (CMD + F on the Macintosh). This increases the defense factor of the unit and makes it harder to defeat in combat, should the city be attacked.

Continue moving the first Militia unit into unexplored territory each turn, following the suggestions of the following section on exploration. When the Settlers unit is completed by your first city, move on to the section below about expansion.

Technology

In addition to population growth, a second critical concept in Civilization is technology. When you begin playing, your tribe already understands at least agriculture, mining, and road construction. But to advance into the computer age and into space, it has a lot to learn. Included in the game are 70+ technological advances, ranging from Bronze Working and Pottery to Nuclear Fission and Robotics. While concerning yourself with the growth and defense of your cities, give some thought to managing the scientific research of your civilization so that it makes reasonable technological progress as well.

Scientific research is carried out by cities and is a by-product of trade. The trade harvested by a city from the surrounding map squares is converted by the city into luxuries (diamond symbols), tax revenue (coin symbols), and science (light bulb symbols). The percentage of the trade that goes into each by-product is determined by the trade rate, shown in the status window. For example, when a new game begins, the trade rate is 0.5.5. This means that no trade becomes luxuries (0), 50% of incoming trade becomes tax revenue (5), and 50% becomes science (5). The tax rate is set at 0.5.5 to start because small cities have no need for luxuries.

The trade rate may be changed as you wish. Pull down the File menu and choose the option "Tax Rate." From the choices that appear, choose "40% Tax, 60% Science." This changes the trade rate in the status window to 0.4.6. When we start playing the tutorial game, each turn 60% of the incoming trade is devoted to scientific research. If the first city only generates one trade symbol each turn, this trade becomes science research because 60% of 1 is 1 when rounded up. In this case, there are no luxuries or tax revenues generated.

Tax Rate Menu

When your civilization begins to produce science research, a new symbol, shaped like a light bulb, appears in the status window. Its presence indicates that research is being carried out. Its color indicates how close you are to learning a new technology. A white bulb is very cool, indicating that only a small amount of research has been completed. As your civilization gets closer to learning the technology, the light bulb gets warmer in color, changing from white, to yellow, to orange, to red. When you learn the new technology, the light bulb cools down again and then reheats as you work toward learning something else. You can also see how close you are to learning a new technology by consulting your Science Advisor from the Advisor's menu.

When play of the tutorial game begins, your city generates its first light bulb of research. At this point, play is interrupted by the appearance of your science advisor. He reports that you are beginning to do research and he recommends a technology for you to study. Click on the OK button to open a menu of technologies that you may research. Choose "Pottery" if it is available, or one of the other advances suggested below if it is not.

Civilization Advances Menu

When play starts, watch the light bulb in the status window change color as turns pass. Eventually, your advisor returns to announce that you have learned the technology of Pottery. At this point, the Civilopedia entry for Pottery opens with information about this advance and what benefit it provides. Knowing Pottery, for example, means that you can now build the Granary improvement in your cities and that the Hanging Gardens Wonder of the World can be built (if no other civilization has built it). Both of these items are now added to the Production menu for your cities.

The technologies available in the game are all listed in the Civilopedia. Pull down the Civilopedia menu and choose the option "Civilization Advances." This opens a menu of all advances listed alphabetically. Choose any advance to learn more about it. A Civilization Advances Chart is included on the back page of this manual. Shown with each advance are the names and icons of any units or improvements that become available with the advance. In addition, civilization advances are briefly described in side bars placed in alphabetical order throughout this manual.

The following technologies are especially helpful to new civilizations. For each, a brief discussion is included that explains why they are of use early in the game.

Pottery: Makes available the Granary improvement which speeds the population growth of any city having one; protects against Famine disaster.

Bronze Working: Makes available the Phalanx unit which is the best defensive unit for the cost for many years; allows construction of the Colossus Wonder, which increases trade for its city.

The Wheel: Makes available the Chariot unit which is an excellent military unit for war; the Chariot is fast and has an excellent attack factor.

Map Making: Makes available the Trireme ship unit; with Triremes you can plant cities overseas, explore coasts, and transport military units. (Requires Alphabet advance.)

Writing: Makes available the Diplomat unit which has many good uses (see Diplomat); makes available the Library improvement, which speeds scientific research. (Requires Alphabet advance.)

Monarchy: Allows the new government of Monarchy which can increase harvests of food and resources. (Requires first Alphabet and then Code of Laws advances, plus Ceremonial Burial.)

Ceremonial Burial: Makes available the Temple improvement which is important for keeping order in cities that grow to populations of 4 and 5, or more.

Alphabet: Leads to other important advances including Writing, Map Making, and Monarchy.

Exploration

In the early stages of a new game, attempt to explore as much of the continent you occupy as you can. The specific goals of exploration are to find good sites for future cities, locate the coasts of your continent, and find rival civilizations.

City Sites: Good city sites are at least four or five squares away from your first city. At this distance the radius of each city does not overlap the other. The actual city square should be a Plains square, Grasslands square with resources (shield symbol visible in the square on the map), or a River square. For a more detailed discussion about choosing city sites, see Placing New Cities.

Locate Coasts: Locating coasts reveals the boundaries of your continent, and aids in the planning of future expansion and city placement. When you know the exact extent of your continent, you can plan new cities to take maximum advantage of the available land. If you place cities without locating coasts, you may discover that the coast is just one square away, leaving it and several coastal squares beyond the radius of your cities. Placing cities on coasts makes it possible to build ship units there later in the game. Ships are necessary for exploration overseas, intercepting enemy invasion forces, and transporting ground units by sea. Locating coasts also helps identify the direction in which other civilizations might be found. If you have explored the entire continent without finding rival civilizations, you can grow and expand without their interference, at least for a while.

Locating Other Civilizations: On Earth, the continents are large. Even though you selected only three civilizations total for this tutorial game, the other two civilizations are probably not that far away. Locate them as soon as you can and

search as far from your city or cities as you can. Enemy civilizations seek your cities and eventually may attack them. If you can keep them away, they obviously can't threaten you.

When you encounter units from another civilization, move next to them and stay next to them, but don't attack with a Militia unit. Early in the game, it is usually best to stay at peace, and concentrate on growth and expansion. By pinning enemy units with Militia, they can't explore, found new cities, or attack your cities. If possible, fortify your exploring unit in a good defensive terrain square (Hills, Mountains) that blocks the movement of enemy units toward your cities. The enemy probably won't attack the Militia, at least for many turns. Take the time to improve your civilization while the enemy remains bottled up.

Sea Exploration: As the game continues, eventually acquire Map Making so that you can build Trireme units. (With Navigation you can build Sail units which are better.) Build at least one Trireme and use it to explore the sea around your coasts. You should always end Trireme movement adjacent to land, or there is a good chance the unit will sink before your next turn. Despite this handicap, they can still explore many sea squares and can jump across oceans that are three squares wide. Sea exploration helps locate other civilizations not on your continent. It is especially important to find enemy cities with which you can establish trade routes. Caravan units and trade routes are discussed in Chapter 3.

Minor Tribes: During exploration, you may encounter small hut symbols on the map. These represent minor tribes of people. They are not rival civilizations. When you move into their square, the minor tribe disappears and one of several things may happen. You may discover valuable metal deposits that are added to your treasury as coins, or a scroll of ancient wisdom that gives you a new technological advance. The tribe may become a military unit for your civilization. The tribe may become a city in your civilization, just as if you had founded a city on their square with a Settlers unit. The tribe may turn out to be a horde of Barbarians. In this case, a Barbarian military unit springs up in every vacant land square surrounding the tribe. This usually means your exploring unit will be destroyed and the Barbarians may raid your civilization.

Expansion

When your first city builds a new Settlers unit, click on the city square to open its city display. Change the city's production because you don't want to produce another Settlers unit immediately. The production of the Settlers unit now available reduced the population of your city by 1 point. Let the city grow some more before producing another. Now is a good time to work on improving the city with a Barracks or Granary. The Barracks is good if you have discovered another civilization nearby because with this improvement present a city produces veteran units which have their attack and defense factors increased by 50%. If no threat is present and you have acquired the advance of Pottery, start building a Granary. This will speed the growth of your city. Exit the city display.

Before moving your Settlers unit, examine the map that has been explored so far and choose a site for your next city. In the next several turns, move the Settlers unit to the square where you want the city to be placed. On the way there, build roads in one or two Grasslands or Plains squares that your first city is using now or soon will use for harvests. Adding roads to these squares adds one unit of trade to the harvest for the square. This trade is converted by the city into either a coin of tax revenue or a light bulb of science research. Both of these commodities are very useful.

As the Settlers unit approaches the square where the new city is to be built, look to see if any Grasslands or Plains squares are along the way. If these are within the radius of the planned city and likely to be harvested, they would benefit from having roads built. Build roads in one or two of these squares, and then move the Settlers into the planned city square. When the Settlers unit is in the correct square, for its next move pull down the Orders menu and choose the option "Found New City."

This command builds a new city which you are asked to name. The Settlers unit again disappears and the population point it contained becomes the first population point of the new city.

When the city display opens for the new city, it is set to produce its own Militia unit. Don't change the production. Once the city produces its first Militia unit, change production to a Settlers unit. When this Settlers unit appears, change the city's production to either Barracks or Granary. Move the new Settlers units off to a new city site and continue expanding.

A few general suggestions about expansion follow.

The Settlers Pipeline: Every city with a population of 2 or more should be building a Settlers unit or be supporting one already. Keep pushing your Settlers out to the frontier of your civilization to found new cities. As they push out, spend some time connecting existing cities with roads, both for the increase in trade and to make it easier for military units to move around your civilization. (A Phalanx unit moves one square per turn without roads and three squares along roads, for example.)

Phalanx Pipeline: Once you have acquired the Bronze Working advance, upgrade the unit defending each of your cities to a veteran Phalanx. It may be useful to have one city with a Barracks make several Phalanxes. New Phalanxes can be marched to another city and make it their home (from the Orders menu choose the option "Home City" when the unit is in the new city). Send out a veteran Phalanx with a Settlers unit. When the Settlers found a new city, the Phalanx can make the city its home and provide defense. The new city can begin producing a Granary or Barracks right away and not build the weak Militia unit for defense.

Militia Screen: Use Militia units to screen other civilizations from good city sites. These Militia units may have been replaced for city defense by Phalanxes. Grab as much territory as you can and place new cities behind your screen. Other civilizations are going to attack you sooner or later, so build as fast as you can and be prepared to go to war. Cities close to the frontier should build a Barracks and be ready to switch over to making military units when war starts.

Basic City Defense: At the minimum, have one unit fortified in your cities. Cities on the coast or interior frontiers should have two fortified defending units. Connect your cities with roads and have a Chariot unit or two available to move quickly to any threatened areas. Once you have acquired Masonry, City Walls are available. However, they are expensive to maintain and shouldn't be considered until the city has a population of 5 or more and already possesses a Barracks, Granary, and Temple.

Barbarians

After a few years have passed, Barbarians begin to appear. These are the red units that can land from ships or rise up in uninhabited parts of the interior. They can appear almost anywhere. Never leave cities undefended or the Barbarians may walk right in and capture them. Barbarians are discussed in more detail later in Chapter 3. For now, there are few things to know about them.

Where Barbarians Appear: They can land on any coastal square. There is nothing you can do about this, so keep your cities defended. They can rise up in any square outside of the radius of a city. As time goes by, they appear farther and farther away from cities. The best defense against Barbarian uprisings is a blanket of cities throughout the continent. If the radii of your cities cover enough of the continent, the Barbarians have nowhere to spring from. Any Minor Tribe (the hut symbols on the map) may turn into a Barbarian horde when you enter its square.

Sea Raiders: Barbarians who raid from the sea are looking for a city to capture. They do not pillage, but instead attack your cities. Their ships may attack units defending coastal cities.

Barbarian Uprisings: Barbarians who rise up in the interior cause destruction. They pillage (destroy) any irrigation or mines that they encounter. These are the most annoying of the Barbarians. They provide a strong incentive for expanding throughout your continent because doing so eliminates the areas from which they can rise up.

Barbarian Leader Ransoms: Most Barbarian hordes are accompanied by a leader who looks like a Barbarian Diplomat unit. When a Barbarian leader is captured, your civilization is paid a ransom of 100 coins. This can be a substantial sum early in a game. To capture a Barbarian leader, wait until he is alone in a square and attack him. If you win the attack, the leader is captured, earning the ransom.

Diplomacy

When you discover another civilization and move next to one of its cities or units, emissaries from the other ruler appear and offer to talk. For now, agree to meet with all kings you encounter.

Opposing civilizations may offer to trade technology. Again, for now, accept all offers to trade. In other games at higher difficulty levels, there may be times when you consider it wise not to trade technology.

As a beginning player, agree to peace with everyone. War may come to you eventually, and you can break the peace when you wish if you think that is best. In the meantime, concentrate first on growth and expansion.

If the opposing king demands technology or cash in tribute, consider the position you are in. If his units are threatening to capture one or more of your cities, pay what is demanded. A few hundred coins or a piece of technology is

probably much cheaper than losing a city or two and having to recapture them. After paying for a temporary peace (and it will be temporary, whether you like it or not), switch all of your production over to military units and prepare for war. The next time this king comes calling, be in a position to destroy his units and take the war to his cities.

During the lull while you are at peace with a belligerent neighboring civilization, consider moving a Diplomat throughout his empire to scout the location of his cities. Diplomats can move around enemy units where normal units would have to stop.

Further Turns

Once you have a few cities started and have explored most of your continent, if not the entire continental land mass, your civilization is on its way. From this point until approximately 1000 AD, continue building a viable civilization. Keep in mind these few suggested goals for various aspects of the game.

Civilization Size: Found at least 5-10 cities, and the more the better. With fewer cities you are likely to be overwhelmed by one of your neighbors.

City Development: Each city should have 20 available squares within its radius, or not many fewer than that. All cities should have a Barracks, Granary, Temple, Marketplace, and Library. Cities on the coast or on the frontier should have City Walls. When a city's population approaches 10, build an Aqueduct so it can grow past that size. Build roads through all Grasslands and Plains squares that you are harvesting to generate trade. Plains squares should be irrigated. Grasslands should be irrigated and Hills should be mined in preparation for new types of governments.

City Defense: Until you acquire the advance of Gunpowder, coastal and frontier cities should be defended by two Phalanxes behind City Walls. Add a Catapult on sentry duty to attack enemy units that move adjacent or keep a Chariot unit nearby. Cities not on the frontier or on the coast can be held with one unit. Build a road network between your cities to speed the movement of military units in an emergency.

Civil Disorder: This is one of the two key internal problems that must be faced by growing civilizations. When your cities grow beyond 4 or 5 people, they may go into disorder and stop producing. This occurs when unhappy people

outnumber happy people in a city. A Temple improvement makes some unhappy people content, as does martial law (stacking military units in the city to control the people). Eventually you must begin providing luxuries to larger cities to create happy people to counteract unhappy people. Keeping cities out of disorder is a high priority because the city will eventually revolt and join another civilization. For more information on civil disorder and controlling it, see Chapter 2.

Trade: The second key internal problem of growing civilizations is balancing the budget. At some point, tax revenues fall short of expenditures each turn for the maintenance of city improvements. Most city improvements require maintenance paid in coins each turn. If your civilization does not earn enough coins each turn to pay maintenance, your treasury begins to shrink. When the treasury falls below zero coins, random improvements are sold to raise money. This is a step backward for your civilization.

Balancing the budget of a civilization is not easy. Tax revenues can be increased in several ways. The most important way is to increase the trade harvested by your cities. The most significant ways to increase trade are building roads through Plains and Grasslands, building trade routes, and changing to a type of government that fosters trade. Tax revenues from existing trade can be increased by raising tax rates, building some improvements (Marketplace, Bank), reducing corruption, and creating Taxmen.

Technology Goals: For the mid-game, we recommend taking paths of technology that lead to learning certain important advances. Look up theses advances in the Civilopedia, manual, or Civilization Advances Chart to see how to reach them.

Construction makes available the Aqueduct improvement which is necessary for cities to grow beyond populations of 10. Bridge Building makes it possible to build roads across River squares, perhaps filling in gaps in your road network. Navigation makes available Sail units which can move beyond coastal squares for sea exploration. Trade makes available the Caravan unit which is used to build trade routes and is also helpful for building Wonders of the World. The Steam Engine makes available the Ironclad unit which is an excellent sea explorer and good for sinking enemy ships attempting to invade your coasts. Railroads allow the building of railroads in squares already containing roads; they increase city harvests and speed ground movement dramatically. Industrialization makes

available the Women's Suffrage Wonder which makes it easy to conduct war while a Republic. Electronics makes available the Hoover Dam Wonder which reduces pollution while boosting resource harvests for all friendly cities on its continent.

Wonders of the World: These unique city improvements are great to own and they help your civilization score. However, they are very time consuming to build and most of them become obsolete at some point. Look over the descriptions of the Wonders and consider which are especially desirable. The best Wonders are probably those that don't go obsolete and that provide a tangible benefit, especially one that applies throughout your civilization. Note that all of the ancient Wonders go obsolete. Experiment by building a few and then consider if you would have been better off taking the time and resources to build other units or improvements. Ancient Wonders may be easier to capture than to build.

Build Wonders in cities with large resource harvests to complete them as soon as possible. Use Caravan units to speed construction.

Governments: New civilizations begin with a government of Despotism. Under this government, it is relatively easy to wage war and build improvements in cities. Once you have founded several cities, consider switching to a Monarchy because this government allows greater harvests of food (on River and Grasslands squares that are irrigated) and resources (on Hills that are mined). Strive to be a Monarchy before 0 AD. The Republic and Democracy greatly foster trade, but both make it difficult to wage war unless you possess the Women's Suffrage Wonder. Establish three trade routes for all of your cities before converting to one of these governments. For more information about the effects of government and how to change governments.

THE GAME TURN

Civilization is played in a series of turns, each following a sequence of play options. As each turn proceeds through the sequence you direct the activities of your civilization, including the management of your cities, the production of new units, the building of city improvements, the movements and battles of your armies, and negotiations with other civilizations.

Each turn proceeds through the following sequence of play.

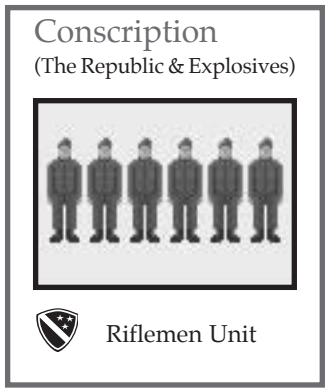
Date

A new turn begins with the advancing of the date. Depending on the current year, the date advances from twenty years to one year. The current date is found in the status window of the map display.

Disasters

At the beginning of a new turn there is a possibility of a natural disaster randomly striking a city in the world. Any disaster that occurs is reported and takes effect immediately. Disasters can result in loss of population or destruction of a city improvement. Most disasters can be prevented by a specific city improvement or technology. If the target city is prepared for the disaster, then the disaster does not occur.

City Check



Each city in your civilization is checked individually for production, growth, unrest, maintenance, and scientific research. These concepts are explained in detail in Chapter 2. All steps are carried out for one city before the next is checked.

Production: If the city generates sufficient surplus resources to complete the item the city is producing, that item is added to the city.

If your city does not generate sufficient resources to support all of the existing units for which it is the home city, units are destroyed until enough support is available. Units farthest away from the city are destroyed first.

Growth: If the city produces sufficient surplus food, it grows by one population point. This added population is put to work on the city map.

Civil Disorder: If the number of unhappy citizens exceeds the number of happy citizens after population growth or the destruction of a city improvement by disaster, your city goes into civil disorder. You receive a message reporting this condition.

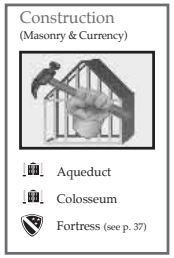
If this is the first turn of disorder, you jump to the affected city's display so that adjustments can be made to return the city to order. If the situation is not corrected, in following turns you are notified that disorder continues.

Maintenance: Taxes collected from the city are added to your treasury and then the maintenance costs for improvements in this city are deducted. If you don't have sufficient funds in your treasury to pay the maintenance costs, one improvement in this city, chosen randomly, is sold.

Note that while your civilization as a whole may have a revenue surplus for the turn, you can still lose an improvement when your treasury is low. High maintenance costs for the first cities checked may deplete the treasury and force a sale before later cities contribute their cash surpluses.

Scientific Research: The research contributed by this city, measured by the number of light bulbs it produces, is added to the total so far accumulated by your civilization. If this total is sufficient to acquire the technology that you have instructed your scientists to study, then you receive a message informing you that you have obtained this new technology.

Movement and Combat



After each city has been checked, you have the opportunity to move your active units. While a unit is moving it may engage in combat.

Each active unit is designated for movement, one after another. Each unit has the option of moving, not moving, or delaying its move until later in the turn. For more detailed information on moving your units, see Movement, page 85.

Combat occurs when a unit attempts to enter a map square occupied by a unit or city of another civilization (see Combat). (Exceptions: see Diplomats and

Caravans.) Normally, either the attacking unit or the defending unit (and all other units stacked with it) are destroyed when the combat is resolved. Victorious attacking units with movement points remaining may continue moving and even attack again.

During this movement phase you may pause to perform all other management tasks for your civilization. For example, you may wish to consult with your advisors concerning the state of your civilization's scientific research or check the attitude of your population. You can examine any or all of your cities to adjust their work force placements or production. This is the time to change tax rates, governments, or examine the state of international affairs.

When all active units have been moved, your game turn is over and the next civilization moves.

End of Turn

Once all active units have been moved, your game turn may end. At this point a blinking "End of Turn" message appears in the unit identification window. (This is part of the status window in the Windows version.) So long as this message remains visible you may still examine cities, consult advisors, etc. To end your turn, press the Enter key. Once you choose to continue, you cannot examine cities, etc., until the next turn.

The End of Turn message may be toggled on or off. In the DOS version, open the Game menu and choose "Options" to open the Options menu. In the Windows version, the Options menu is reached from the File menu. One of the options on the Options menu is "End of Turn." There is check mark next to the option indicating that it is on and that the End of Turn message will appear at the end of each turn. To turn off the message, choose the "End of Turn" option and the check mark disappears.

Even when the End of Turn message is turned off, it still appears during any turn in which you have no active units.

When the End of Turn message is off, you receive no warning that the turn is about to end. At the moment you move your last unit, your turn is over and the next civilization begins to move.

Adulation

After all of the civilizations have taken their turns, there is a brief pause while the record keepers and historians examine your accomplishments to date. The people of your civilization may reward the outstanding success of your policies by expanding and improving your palace. In addition, independent historians and chroniclers may report on where your civilization stands compared to your rivals.

Palace: As your civilization prospers, the people spontaneously expand and improve your palace to reflect the glory that your leadership has achieved. When the score of your civilization reaches certain milestones, your palace increases in size or improves in quality. The score milestones at which palace improvements are made are determined by the level of difficulty. A maximum of 37 improvements can be made to the palace.

Palace Construction Display

When the people announce a palace improvement, clear the screen if necessary by pressing the Enter key. The areas of possible improvement are labeled 1-7 on the building and A-C on the grounds. Click on the number or letter corresponding to the area you wish to improve or to where you wish to add new construction. If you click on a number, the screen changes to show the styles of additions or improvements that are available. Palaces can be built in three styles: classical, medieval, or Middle Eastern. From the available parts displayed, select the one you wish to have built. The screen refreshes to show the improved palace.

A miniature rendition of your palace is shown in the palace window of the map display in the DOS version. In the Windows version, the palace is shown in the status window.

Palace improvements may be toggled on or off from the Options menu. This is reached from the Game menu in the DOS version and from the File menu in the Windows version.

Historians: There are four historians who occasionally report on the progress of the civilizations in your world. These reports are an opportunity for you to judge how you are doing. The historians are Herodotus, Pliny, Gibbon, and Toynbee.

Civilizations may be judged in any one of five categories, listed below. The published list includes only the civilizations with whom you have established an embassy. (Embassies are established by Diplomats.) However, all civilizations, known and unknown, are considered in rankings. For example, if your civilization has the third highest population but the larger civilizations are not known, you would appear at the top of the list, but shown as number three in the world.

The five categories and how they are ranked follow.

Advancement: The number of technology advancements each civilization has acquired.

Happiness: The number of happy people in each civilization's cities.

Power: The total of the attack and defense factors of each civilization's military units.

Size: The population of each civilization.

Wealth: The size of each civilization's treasury.

Currency
(Bronze Working)

Marketplace

ENDING THE GAME AND WINNING

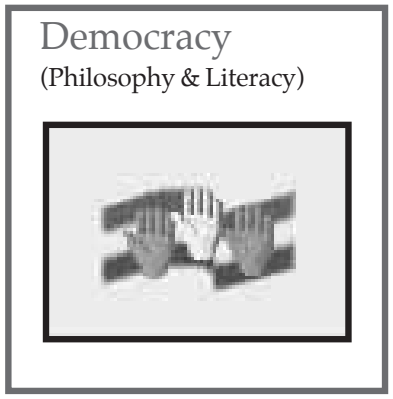
Civilization may be ended in five ways. You may quit at any time, retire at any time, be destroyed by a rival, continue on until the game and the history of your civilization both automatically end, or conquer the world by eliminating all other civilizations. If you retire or let the game run its course the performance of your civilization is judged and compared against your peers. If you have been a good manager and leader, your name may be added to the Civilization Hall of Fame.

Although the game ends for scoring purposes after you win, you may continue playing if you choose. After winning, you are offered the opportunity to keep playing. No additional score is kept for this extra play.

Ending Play

Quitting: You may quit during your civilization's turn. In the DOS version, press the Alt + Q keys to quit or choose the option "Quit" from the Game menu. You must be at the map display and one of your units must be waiting for orders (blinking on the map) for the Alt + Q keys to work. In the Windows version, press the Ctrl + Q keys (CMD + Q keys for the Macintosh) or choose the option "Quit" from the File menu. The map window must be selected for the Ctrl + Q keys to work.

You may not quit from any other display or window except as a menu option, or quit when another civilization is taking its turn. When you quit, you are given one chance to change your mind before the decision is irrevocable. You are not shown your civilization score or entered into the Hall of Fame.



Retiring: To retire in the DOS version, open the Game menu and choose the option "Retire." In the Windows version, open the File menu and choose the option "Retire." You are given one chance to change your mind. If you proceed to retire, you are shown your civilization score and entered into the Hall of Fame if you qualify. You also have an option to review a replay of the world's history.

Destruction: If your civilization is destroyed by one of your rivals, then the game ends immediately. You are not given a chance to start over in this world. Since you can have no score, you cannot qualify for the Hall of Fame. You may review a replay of the world's history. If you want to play again, you must start over with a new world.

Automatic Ending: A game of Civilization automatically ends in two circumstances. First, it ends after a certain year, depending on the level of difficulty you chose at the start- Chieftain (2100), Warlord (2080), Prince (2060), King (2040), Emperor (2020). No play is allowed beyond these dates.

Second, a game ends when a spaceship containing colonists from any civilization reaches the nearby Alpha Centauri star system. In this case play temporarily ceases. Your final civilization score is reported and you are entered into the Hall of Fame if you qualify. However, you do not necessarily have to quit playing. Although your score is not recorded hereafter, if you wish, you may continue playing to see what the future holds. In the Windows version, choose the "Resume" option. However, play does stop when the normal ending date is reached.

Conquer the World: If you succeed in eliminating all other civilizations in the world, the game immediately ends. This is the ultimate achievement possible by a civilization. You are shown your civilization score and may be entered into the Hall of Fame. You may review a replay of the world's history. You may not continue playing after conquering the world.

Winning

You win a game of Civilization in either of two ways: eliminate all rival civilizations or survive until the colonization of space begins.

The elimination of all other civilizations in the world is very hard to accomplish, except by very experienced players or by playing at low levels of difficulty. You are much more likely to win by being in existence when colonists reach Alpha Centauri. Even if the colonists are not yours, the successful direction of your civilization through the centuries is an achievement. You have survived countless wars, the pollution of the industrial age, and the risks of nuclear weapons.

Once the game is won, your skill as ruler is measured by a final civilization score.

Civilization Score: This is the sum of the following factors, plus any bonus for space colonists or conquering the world.

2 points: each happy citizen

1 point: each content citizen

20 points: each Wonder of the World

3 points: each turn of peace (no war anywhere)

5 points: each futuristic advance your civilization acquires (see page 27)

(-) 10 points: each map square currently polluted

Your civilization score may be checked while you play. Choose the option "Civilization Score" from the World menu or press the shortcut key (F9 in the DOS version or Ctrl + 9 in the Windows version).

Space Colonists Bonus: In addition to the above points, if your spaceship is the first to reach Alpha Centauri you can receive a bonus score. This is 50 points per 10,000 colonists sent, multiplied by the success percentage of your mission. For example, if your spaceship arrives first with 10,000 colonists and the success percentage of your expedition was 80%, then you receive 40 bonus points.

Conquering the World Bonus: If you succeed in conquering the world during the year 2000 AD, you receive 1000 civilization points. This bonus is modified by (+) 2 points for each year before that date, by (-) 2 points for each year after that date, and by (-) 100 points for each civilization less than 7 that you selected to begin the game with.

Power Graph

The Power Graph appears at the end of a game and shows the relative strength of civilizations that took part. The power of each civilization is indicated on the graph by a line in its color. For example, the Germans are blue and a blue line indicates the strength of their civilization. The higher a line climbs on the graph, the greater the power of the civilization. Civilizations that are destroyed have their line fall to the bottom of the graph. Everything a civilization possesses, including cities, population, improvements, Wonders, treasury, technology, and units, is added together to calculate its power.

The Hall Of Fame

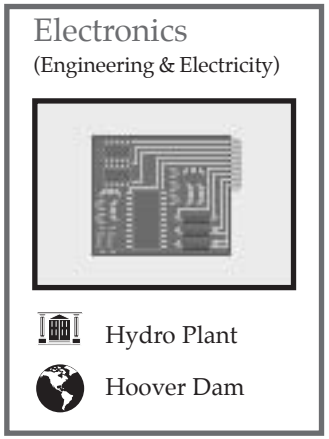
The Hall of Fame records the five best civilizations that you have built, listed in order of their civilization ranking. This ranking is determined from the basic civilization score multiplied by a level of difficulty factor. The higher the civilization ranking, the higher the position in the Hall of Fame.

You can examine the Hall of Fame when starting a new game from the Pre-Game Options menu. When you retire or reach the automatic end of a game, the Hall of Fame is displayed, even if you don't qualify to be inducted.

In the DOS version you may clear all of the current entries in the Hall of Fame if you wish by clicking on the Clear button. This eliminates all entries in the Hall of Fame except the one just finished if you are looking at the entries before exiting a played game.

Replay Options

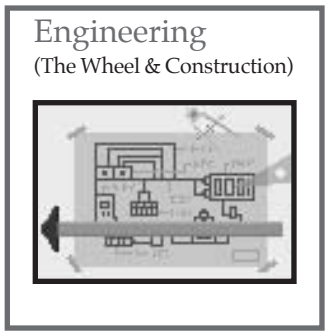
When a game ends normally (not by retiring), you are given the opportunity to review your civilization's history by watching a replay of the game. The Replay menu offers three choices: "Quick Replay", "Complete Replay", and "Write Replay to Disk".



Quick Replay: On a basic map of the entire world showing no terrain, the game is replayed turn by turn by noting the founding, capture, and destruction of cities by all civilizations. The land mass changes color to correspond to the civilization controlling each area. Watch the rise and fall of civilizations and learn what was happening while you were busy in your own corner of the world. This replay is conducted automatically.

Complete Replay: This replay includes all of the information reported in the Quick Replay with some additions. You also learn who first achieved each civilization advance, who was the first to build each type of unit, who built each Wonder of the World, who was at war or peace and with whom, and the complete destruction of civilizations. The Complete Replay stops after each information report. You must click the mouse or press the Enter key to continue.

Write Replay to Disk: Choosing this option saves a text file of the replay to your hard disk. A dialog box lets you specify the file name. As part of the replay information, a map of the world is also saved. This map shows all land masses and the location and nationality of all cities. It also shows where destroyed cities were located. After you have exited the game, you can view and/or print the file in a word processing program.



CITIES

The economic and industrial centers of your civilization are its cities. They are the residence of the population, the source of tax dollars, the home of your scientists, and the sites of your industrial production. Each city organizes the development of the area surrounding it, harvesting the nearby agricultural land, natural resources, and potential trade, and converting these materials into food, industrial production, technology, and cash.

One measure of the success of your civilization is the number of cities it encompasses and the size of each. Larger cities collect more taxes, conduct more technology research, and produce new items faster. Small civilizations, both in numbers of cities and the sizes of each, risk being overrun by larger and more powerful neighbors. Falling too far behind in the arms race, both in quality and quantity, may result in an early exit from history.

The management of your civilization involves the founding of cities, their management, and their protection. New cities can be built from scratch or captured from rivals. Managing a city requires maintaining a balance of food, industry, taxes, luxuries, and improvements that keeps the citizens content and productive.

Rival civilizations are a constant threat to the security of your cities. After taking steps to protect them, consider conquering the cities of your rivals. This reduces the threat they pose and is often an inexpensive way to expand.

New Cities

New cities can be acquired in three ways: they can be started from scratch, a minor tribe discovered by your armies may elect to join you as a new city, or your armies can conquer the cities of your neighbors.

Founding New Cities: When an active Settlers unit is on a map square where you wish to build a new city, choose the option "Found New City" from the Orders menu or press the B key. If you have accidentally pressed this key and built a city by mistake, you can undo the command. For the IBM/DOS version, press the Escape key immediately.

For the Windows version, a dialog box opens that presents both a Go Back button and an OK button. Push the OK button to build the city and the Go Back button to not build the city.

Your advisors propose a name for the new city or you can type in a name you prefer. When you are satisfied with the name, press the Enter key or the OK button. After a brief animation of the city being founded, the city display opens so that production and economic development can be arranged as desired. When the display is closed, the new city is on the map and the Settlers unit has disappeared, having become the first citizens of the city.

Minor Tribes: As your armies explore the world they may encounter the huts of minor tribes. Occasionally a minor tribe may be sufficiently awed by your emissaries to immediately form a new city and become part of your civilization.

Capturing Cities: Cities of other civilizations are normally defended. If the defenders can be destroyed, a friendly army may move into the city and capture it. A captured city is thereafter managed and controlled by you in the same manner as any other city. Capturing an enemy city may also result in the discovery of a new technology advance and plundered cash.

Occupying an enemy city destroys roughly half of the improvements the city has built, including all Temples and Cathedrals, but not Wonders of the World. Capture also eliminates one point of population. Therefore, a city that has only one point of population remaining is destroyed instead of captured when it is entered.

Placing New Cities

When building a new city, plan carefully where it is placed. The map square in which it is built and the squares surrounding it determine how valuable the city can become. Factors to be considered include the economic value of the square the city is placed in, the economic potential within the city's radius, the proximity of other cities, and the strategic value of the location. Ideally, locate cities in areas that offer a combination of food for population growth, resources for production, and trade. Where possible, take advantage of the presence of special resource squares.

City Square: The terrain the city occupies is especially important because it is always under development. You cannot take workers off of this square when adjusting development on the city map (see City Map). If this area is not useful, especially for producing food, then population growth in the new city is handicapped. For this reason, new cities are preferably built in Plains, Grasslands, or Rivers. These provide the best food production and, thus, faster population growth.

Note that all beginning civilizations possess the technologies of road building and irrigation. When you found a city on a Plains, Grassland, or River square, the square is automatically improved by roads and irrigation. When you found a city on any other square, the square is automatically improved by roads.

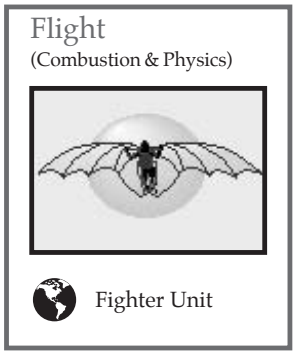
City Radius: The potential area of development extends out from a city two squares on the map in every direction except diagonally. If the city grows large enough, its population can bring all of this area into development. When planning a new city, consider this radius and the long-term benefits of any potential site.

To increase in population, the city must encompass squares that produce food. Any city that can grow has value, but your most important cities are those that also have resources available. These cities can quickly build and support military units and Wonders. Hills and Forests are important sources of resources, as are squares containing special resource symbols for game, horses, coal, and oil.

The importance of trade in generating taxes and technology makes River squares especially good sites for cities when just beginning. Without Rivers, you must quickly build Roads in Plains or Grasslands to generate trade.

Terrain Conversion: When surveying sites for a new city, keep in mind the potential for some squares to be improved. Hills and Mountains can be mined and then produce increased resources. Plains, Rivers, and Grasslands can be irrigated and then produce more food. Swamps and Jungles can be cleared into Grasslands or converted to Forests. Forests may be cleared into Plains. Plains and Grasslands may be turned into Forests if you need resources. An area of Jungles and Swamps looks barren at first, but has the potential to become a very rich city site. For more information on terrain improvements, see Settlers.

Plains, Grasslands, and Deserts produce trade once penetrated by roads, and all land squares improve in production when Railroads come through.



Proximity Of Cities: Another consideration when planning new cities is the current or potential location of other cities. Minimize the economic radius overlap of your cities as much as possible. Since a map area may only be used by one city, too much overlap restricts the potential growth of one or both cities. When just beginning, explore nearby lands as soon as possible to begin planning the placement of future cities to take best advantage of the terrain. A few large and powerful cities are usually more useful than several smaller, weaker ones.

Strategic Value: The strategic value of a city's site is a final consideration. Because the underlying terrain can increase the defender's strength when under attack, in some circumstances the defensive value of terrain may be more important than economic value. But good defensive terrain (Hills, Mountains) is generally poor for food production and inhibits the early growth of a city. A good compromise is to build a city on a River square. This is a good food area and better than Plains or Grasslands for defense.

Regardless of where a city is built, it is easier to defend than the same terrain without a city present. In a city you can build the City Walls improvement which triples the defense factor of armies. Also, in cities only one army at a time is destroyed in combat. Outside of cities, all armies stacked together are destroyed when any army in the stack is defeated (Exception: see Fortresses). So, in certain cases where a continent bottlenecks and a rival is on the other side, the defensive value of a city site may be more critical than economic value.

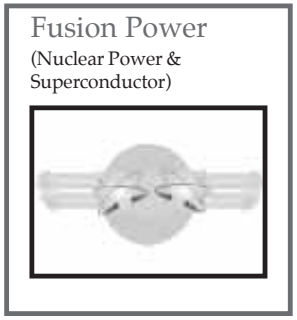
Placing at least a few cities on the seacoast gives you access to the ocean. This allows the launching of ship units to explore the world and transport your units overseas. With few coastal cities, your sea power is constrained.

City Management

There are several goals for management of a city: keeping it stable (avoiding civil disorder), keeping its population growing, maximizing a useful mix of

economic development (food, resources, and trade), producing tax revenue, producing technology research, and producing useful units and improvements.

Stability: Cities that don't maintain a favorable balance of happy people over unhappy people go into civil disorder. Cities in civil disorder produce no tax revenue, technology research, or food surpluses, and the condition suspends production. A nuclear reactor in a city suffering civil disorder may experience a meltdown due to lax safety controls (see Nuclear Meltdown). Keeping a city stable is a very high priority.



Population Growth: Keeping the population growing is important because each additional person contributes something to your civilization. Each new worker brings a new map square under production. Population growth increases economic power, and thus, the strength of your civilization. The size of your population is a major factor in determining your civilization score, a measure of how well you have ruled.

Resource Development: The people of the city that work in the surrounding countryside harness the economic resources of the area. Those resources are converted by the city into more people, industrial production, money, and technology research. When managing a city, allocate the people so as to maximize this development or to meet your needs.

There may be times when increased industrial output is preferred over population growth. There may be times when increased trade is needed. Shift a city's work force around to change the mix of economic development as desired.

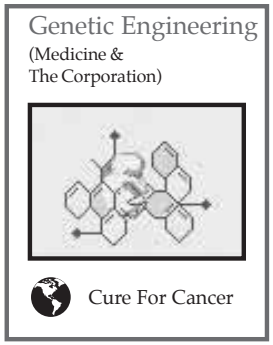
Tax Revenue: Most of the improvements that can be built within cities require money for maintenance. Money is also useful for speeding industrial production (see Rush Jobs), bribing enemy armies, inciting revolts in enemy cities, and for negotiating peace with your neighbors. The combined tax revenues of your cities must exceed their maintenance requirements before cash can accumulate for other uses. The percentage of your trade that is converted into tax revenues is determined by the tax rate. See Trade Rates.

Although it is not necessary for each city to produce surplus revenue, enough cities must do so to cover expenses. Some cities may not be especially suited for industrial production, but may still be good trading centers. Manage these cities to produce
extra revenue.

Technology Research: The greater the research contribution each city makes toward new technology, the faster the new civilization advance is reached. The amount of research done in each city is a function of the science rate. This is a percentage of the city's trade that is devoted to bringing in new ideas and otherwise discovering technology advances (see Trade Rates). A city's research contribution can also be influenced by adjusting trade, creating Scientists, and building certain improvements. Improvements that can help are the Library and University, which both improve research, and several Wonders.

Once your civilization begins to accumulate science, your Science Advisor appears and requests that you choose what new technology he should seek to learn. He may suggest an advance that he believes to be useful. Press the "OK" button to clear the advisor's dialog box. This opens another dialog box that lists all of the advances you may seek. Choose one and your scientists go off to learn it. Once you have chosen you may not change your mind. You may not change the research your scientists are doing until they learn the technology you have chosen.

Each technology advance made by your civilization provides new opportunities. It may mean that a new unit type may now be built, or a new city improvement, or a new Wonder of the World. The production menus in your city displays are immediately revised to show new items that can be built.



When a new advance is acquired, your advisor appears again to ask for a new technology to research. Because later advances build on the earlier ones, each advance you achieve eventually makes it possible to learn new ones not previously available for study.

A brief description of each advance can be found in side bars throughout the manual. Advances appear alphabetically. In addition, each advance is discussed

in detail in the Civilopedia. When your Science Advisor asks you to choose a new technology to research, you can immediately get help concerning the choices available before making your choice. For the IBM/DOS version, select the advance you wish to know more about and press the Alt + H keys. For the Windows or Macintosh versions, select the choice you wish to know more about and press the "Help" button. For all versions the Civilopedia entry for the advance opens for you to read.

In a long game you may eventually acquire all of the advances of technology through the 20th Century. Thereafter, you can only research futuristic advances.

Industrial Production: Each city has more or less capacity to produce new units and improvements. The most valuable cities have the greatest industrial capacity. They can quickly produce expensive military units that extend the power of your civilization. They are also best at producing the Wonders of the World. You must regularly monitor the production of your cities to insure that the most needed items are being built.

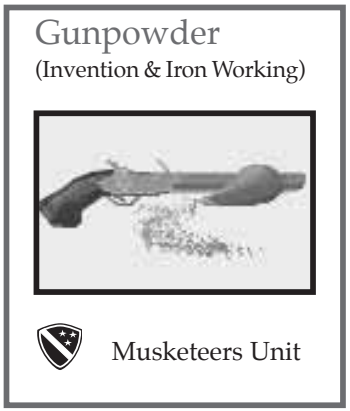
There are four main tools available to reach and maintain these goals of city management: shifting workers around, converting some workers to Specialists, building improvements, and building Wonders of the World.

Workers can be shifted around the city map to adjust economic development (see the manual section City Map). Specialists can be created to increase production of luxuries, taxes, or technology (see the manual section Specialists).

Within each city you can order the construction of improvements such as a Temple to make some unhappy people content, a Granary to speed population growth, or a Library to increase research. See the manual section City Improvements or consult the Civilopedia for the list of possible city improvements. From either source you can also learn the construction and maintenance cost of each improvement, its purpose, and what technology is required to make it available.

The most costly tools available are the Wonders of the World. These are magnificent improvements that bring lasting glory to your civilization in addition to some special effect. The possible Wonders are described in the manual section Wonders of the World or in the Civilopedia. Although Wonders are built in a city like an improvement, their special effect often extends through all or part of your civilization. However, only one of each Wonder may be built in the entire world and your rivals may construct them first.

City Protection



Great economic management of a city is worthless if the city is captured by rivals or barbarians. Part of the management plan must concern the defense of the city. A large part of the defense is not handled locally, but on your borders and coasts. A defensive line of units, both at sea and on land, that can intercept enemies before they get close to your cities can be helpful.

Even the best defensive lines can be penetrated, so the defense of the city itself cannot be neglected. The minimum city defense is one army, preferably one with a good defense factor. Fortify any armies that you expect to defend a city (choose "Fortify" from the Orders menu or press the F key) because Fortified units increase their defense strength. A second defender is recommended. Adding an army with a strong attack factor is also useful. This army can attack enemies that move adjacent to the city, perhaps destroying them before they can launch an attack.

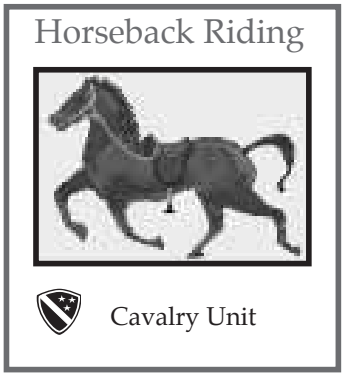
The defense of a city can be substantially improved by building City Walls, an improvement that triples the defender's strength against most attackers, but not Artillery or Bombers. This tripling takes effect after veteran status and terrain are considered. City Walls also prevent population loss when defending units are destroyed.

When civilization advances make available new army types with better defense factors, take the first opportunity to replace old defenders with better units. Since the offensive capability of your enemies improves as they acquire new technology, your defenses must improve to keep up.

Linking cities with Roads and Railroads can be very helpful in speeding the movement of units from one end of your empire to trouble spots elsewhere. This puts your defensive armies on "interior lines," allowing them to rapidly move to where they are needed.

Civil Disorder

A city suffers civil disorder when unhappy people outnumber happy people. Content people and Specialists are ignored in the calculation. Cities in disorder provide no tax revenue, contribute no technology research, and suspend production of new units or improvements. When order is restored, the city returns to normal operation next turn. You can restore order in several ways.



To restore order you may pay to complete an improvement, such as a Temple, that can convert sufficient unhappy people to contentment (or content people to happiness) to restore balance. See the Rush Jobs for how to do this.

You may also change the luxury and tax rates of your civilization to attempt to restore order. Increasing luxuries may convert some content people to happy.

You may take one or more people out of the work force, making them Specialists. This increases the number of happy people. For information on how to do this, see Specialists. When creating Specialists, be careful not to also cause shortages of food or resources that cause starvation of the population or scrapping of armies.

Under the government types Despotism, Monarchy, or Communism, it is possible to restore order to a city using martial law. Each military unit in a city, up to three, makes one unhappy citizen content. Only those units possessing an attack factor of 1 or more can impose martial law. By moving enough units into a city suffering civil disorder, order may be restored.

Under a Despotic government, citizen unhappiness increases with the number of cities. This can lead to very unhappy citizens who must be converted first to unhappy citizens before they can become content. This occurs to a much lesser degree under other types of government.

Each ground or naval unit not in its home city, and each air or Nuclear unit regardless of where it is located, creates unhappy citizens: one per unit under Republican government and two per unit under Democratic government.

Transport, Diplomat, Caravan, and Settlers units do not cause this effect. When a city is in disorder, destroying distant military units, returning them to the home city, or changing their home city, makes some unhappy people content and may restore the city to order.

All of these methods are useful in restoring the balance of your cities or enemy cities which you have captured.

"We Love The (King) Day"

When a city becomes sufficiently happy, it may hold a celebration in honor of your rule. The people declare a "We Love the (King) Day" in thanks for the prosperity you have made possible. While the circumstances that trigger this celebratory mood continue, the city enjoys certain benefits, depending on your civilization's type of government.

The prerequisites for the We Love the (King) Day celebration to occur are: no unhappy people in the city, at least as many happy people as content people, and a city population of at least three. Specialists are considered content citizens for this calculation. For example, a city with five happy people, four content people, and no unhappy people celebrates. A city with ten happy people, three content people and one unhappy person does not.

Anarchy: The celebration has no effect when the government is in Anarchy.

Despotism: The celebrating city is operated as if the government is a Monarchy. This can increase the amount of food and resources generated when some terrain types are irrigated and mined.

Monarchy/Communism: A celebrating city currently ruled by either of these governments is operated as if the government is a Democracy instead. This increases the amount of trade generated.

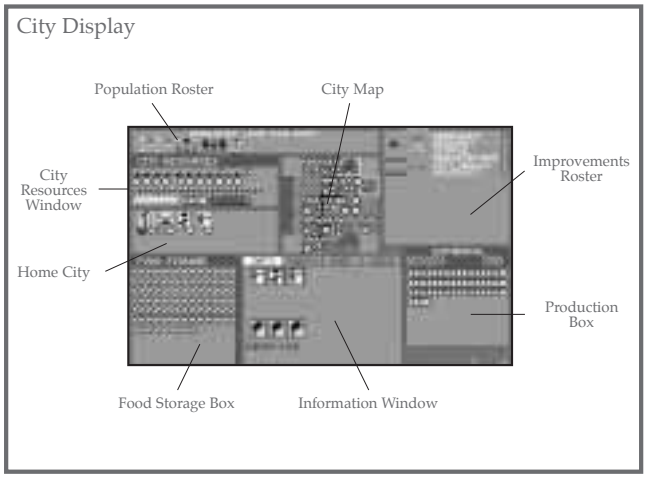
Republic/Democracy: A celebrating city currently ruled by either of these governments increases in population by one point each turn so long as sufficient food is available. This can result in dramatic growth of the city.

THE CITY DISPLAY

The operation of each city is directed from its city display. Here you assign the population to work in the surrounding fields, mines, forests, and fishing grounds. Here also you determine what unit or other item the city is to produce. The display provides in one place the critical information available concerning the city's status: how much food, resources, and trade it is generating; what it is producing and how close the item is to completion; the happiness of the population; what is defending the city; and what improvements have been built.

This display is opened from the map window. Click the LMB on the city's map square. The city display is closed by clicking on the exit button.

The city display consists of the following parts: city map, city resources window, population roster, food storage box, production box, improvements roster, information window, and the home city window. Each part performs a specific function or reports information. The city display shown in the accompanying illustration is from the IBM/DOS version. The display in the Windows version is very similar but has the production box and information window switched.



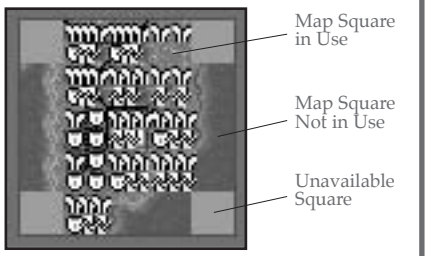
City Display (Windows Version)

City Map

This shows the radius of map squares surrounding the city that may be developed by the city's population. The maximum number of squares that a city may put in development equals the number of people plus one, but the additional one is always the city square itself. Note that it is possible to have more population than places to put them to work.

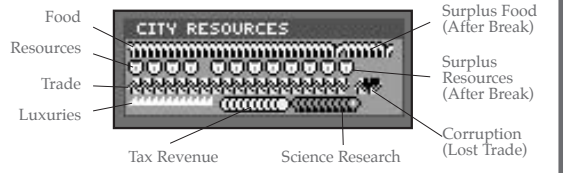
Depending on the type of terrain in a map square, putting people to work there may result in harvests of food (the grain symbol), resources (the shield symbol) or trade (the arrows symbol). Most squares produce a combination of several items. You may move people from one square to another as you wish to change the mix of food, resources, and trade the city is harvesting.

City Map



People removed from the city map are temporarily converted into Specialists in the population roster. When they are put back to work on the map, they convert back to normal people. To remove people from the map, place the mouse pointer on the correct map square and click the LMB. To put them back to work, place the pointer on the city map square where you wish them to go and click the LMB again. As people are removed, replaced, and switched around, the amounts of food, resources, and trade generated by the city also change.

City Resources Window



When the city population increases, the new people are automatically assigned an area to develop. You may wish to review the map of a city that has just increased in size to be certain the workers have been placed as you wish.

City Resources Window

This window shows the amounts of food, resources, trade, corruption, luxuries, taxes, and scientific research generated by the city's people. These commodities are the raw materials of your civilization. They are harvested from the surrounding map squares and brought into the city. There these raw materials become new people, new units, city improvements, Wonders of the World, cash, and civilization advances.

Food, resources, and trade are collected each turn from the city map squares being worked by the citizens. In some cases the amount of a commodity collected may be increased by the presence of a certain improvement in the city, or ownership of a certain Wonder. For example, a Factory improvement increases resource production by 50%. A city that produces ten resources from its city map actually has 15 resources to spend if it possesses a Factory. Trade is further divided into three commodities that it brings in: luxuries, cash, and science (knowledge). The division of trade depends on the trade rates shown in the status report of the map display (see Trade Rates). Under certain conditions, some trade is lost as corruption.

Food: A population point, or citizen symbol, in your city requires two units of food each turn. If your city is currently producing more food than that, the surplus is shown after a break in the food line. The excess goes into the food storage box shown elsewhere on the city display and described below.

If you are not producing enough food to feed the population, the amount of food that you are short is shown as a shortfall in the food line noted by black food symbols after the break in the line. For each turn this shortage cannot be made up from food in storage, the city's population decreases by one point.

Existing Settlers units that a city has produced also require one or two food units per turn, depending on your type of government.

Resources: The shield symbols indicate the resources of raw materials and industrial capacity of the city. Depending on the form of government of your civilization, part of this capacity may be required to maintain units that the city

has previously built. Surplus capacity is shown to the right of a break in the industry line and is available to be used to build new units or city improvements. This surplus goes into the production box shown elsewhere on the display and described below.

If the city's industrial capacity is not sufficient to maintain already existing units, the amount of resources that you are short is shown as a shortfall in the resource line, noted by black symbols to the right of the break in the line. If the resources available are not sufficient to maintain all existing units, then units not maintained are destroyed wherever they exist, beginning with the one farthest from the city.

Diplomats and Caravans do not require maintenance under any form of government.

The amount of resources generated from the city map squares may be increased by improving the city with a Factory, Manufacturing Plant, Power Plant, Nuclear Plant, or Hydro Plant. The Hoover Dam Wonder improves the resources for all of your cities on its continent.

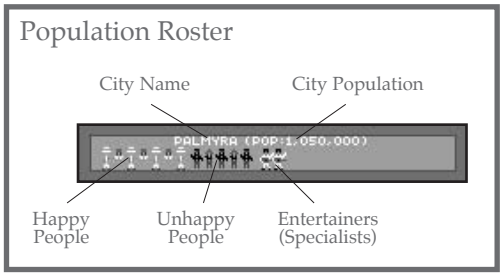
Trade: Trade is produced by Roads through Plains and Grasslands, by Rivers, by Oceans/Lakes, by squares containing Gold Mines or Gems, and by Caravan trade routes. Trade arrives as luxuries, taxes, and scientific research, depending on your trade rates. For example, if your luxury/tax/science rates seen on the map display are 3.3.4, 30% of your trade arrives as luxuries, 30% as tax revenue, and 40% as science. At these rates, a city generating ten trade would convert that into three diamonds of luxuries, three coins of taxes, and four light bulbs of research.

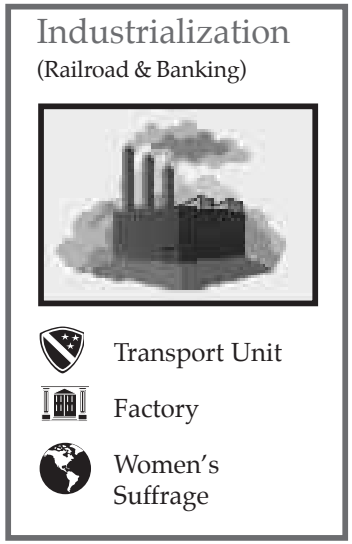
Trade, and thus luxuries, taxes, and science, may be increased by the establishment of trade routes, certain types of government, the Colossus Wonder, and celebration of a "We Love the (King) Day."

Luxuries: These are shown as diamonds. For every two diamonds of luxuries produced, one content citizen becomes happy or one unhappy citizen becomes content. Luxuries are most useful for making people happy, especially in very large cities that may have a large segment of unhappy people that needs to be countered.

The amount of luxuries generated may be increased quickly by creating Entertainers, a type of Specialist discussed below. Luxuries may be increased by

raising the luxury rate. The amount of luxuries brought in by trade may be increased by a Marketplace or Bank.





Tax Revenues: These are shown as gold coins and are used to pay maintenance costs for city improvements. Surplus taxes collected are added to the treasury and can be spent later. The amount of taxes collected from trade may be increased by Taxmen, another type of Specialist. The amount of taxes brought in by trade may be increased by a Marketplace or Bank.

Scientific Research: The knowledge that results from science research is shown as light bulbs. Each new technology that you direct your scientists to discover requires the investment of a certain amount of research. When enough light bulbs of research have been accumulated, the new advance is acquired by your civilization. The Library and University improvements plus some of the Wonders of the World increase the amount of research a city does. In addition, research may be increased by another type of Specialist called Scientists.

Corruption: Depending on your type of government and the city's distance from your palace, some trade may be lost as corruption. Corruption is marked by a modified trade symbol with a dark shadow after a break in the trade line. The farther your city from the city containing your Palace (your capital), the more corruption and lost trade. Building a Courthouse improvement in a city reduces corruption by half.

Population Roster

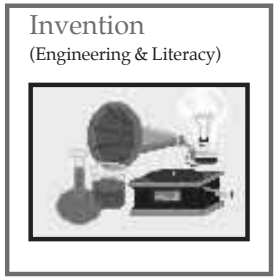
The population of your city is shown by a row of citizens in the population roster. Each person represents one population point. In addition to normal workers, the city may include three different types of Specialists, discussed below.

The normal people who work in city map areas are shown as either happy, content, or unhappy. Manage your city's production and improvements so that a balance of happy and unhappy people is maintained at the minimum. If the number of unhappy people exceeds the number of happy people (with content people and Specialists being ignored) your city goes into civil disorder.

Looking at the population roster is a quick way to see how the balance of happy and unhappy citizens stands. When a city is about to increase in size, it may be useful to adjust the work force so that the city is not thrown into disorder by the increase. You can examine the population rosters of all of your cities at one time by consulting your Attitude Advisor from the Advisor menu.

Specialists

People taken off the work force and removed from the city map become Specialists. Click on a city map square to make the people there Specialists. These people no longer directly contribute to the food, resources, and trade the city generates. However, they may be useful in adjusting the amount of luxuries, taxes, and science the city generates. If your city is producing sufficient food, you may be able to afford Specialists and their special abilities. Specialists do require food like other people.



There are three types of Specialists. Entertainers are musicians and other artists who provide luxuries for your city, and their presence makes more people happy. Taxmen are bureaucrats who make the city government, specifically tax collection, more efficient. Scientists are researchers who increase the city's contribution toward discovering new technology.

Cities must have a population base of five or more to support Taxmen or Scientist Specialists.

Entertainers: People removed from the work force immediately become Entertainers. Each Entertainer adds two trade symbols to that part of the city's trade brought in as luxuries. This additional trade is added before the effects of improvements such as Marketplaces and Banks are calculated. Creating Entertainers has the result of creating more luxuries and making more happy people.

Taxmen: You can change an Entertainer into a Taxman. Click the LMB on the Entertainer in the population roster. The Entertainer converts into a Taxman. Each Taxman has a similar effect to that of an Entertainer, except that tax revenues are increased, not luxuries. When an Entertainer is converted, the luxury benefit stops working.

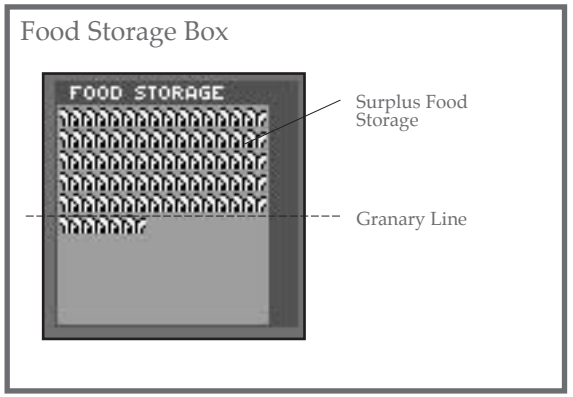
Note that increasing taxes is only helpful if the city remains out of civil disorder. Otherwise, no collection is made.

Scientists: You can change a Taxman into a Scientist. Click the LMB on a Taxman and he is converted into a Scientist. This Specialist is a researcher who increases the amount of research your city is producing, just as Entertainers increase luxuries and Taxmen increase taxes. As with Taxmen, Scientists are only useful if your city is not in civil disorder.

Taxmen can also be turned into Entertainers.

Food Storage Box

Into this box goes any surplus food generated by your city each turn. This is food to the right of the break in the food line of the city resources window, if a break is present. This food is not needed to feed the city's population and the Settlers that it is supporting. Food put in the storage box is stored and accumulates each turn. When the box overflows, your city's population grows by one point and a new citizen is added to the population roster. The storage box is emptied and begins to fill again next turn.



If one of your cities is not currently producing enough food to feed its

population, the people don't starve so long as food is available for use in the storage box. Each turn, any food shortage is subtracted from food in the box. If the box is empty and the city still has a food shortfall, one point of population starves and disappears.

The Granary improvement has the effect of speeding population growth. When a city has a Granary, the storage box only half empties when it overflows and creates more people. The box empties only to the granary line. In addition, a Granary protects the city from starvation during a Famine disaster.

Production Box

Into this box go any surplus resources generated by your city each turn. Surplus resources are those not needed to maintain existing units and are shown to the right of the break in the resource line in the city resources window, if present. Resources accumulate in the box until it fills, thereby completing the unit or improvement being built.

The item being built is noted by its icon, if it is a unit, or its name if it is an improvement or Wonder. The items available for building depend on the technology your civilization has achieved at the moment. The size of the production box grows or shrinks, depending on the number of resources required to build each item. You may change the item being built before it is completed at any time and the resources already invested go into the new item. You may also speed the completion of an item by paying for a rush job.

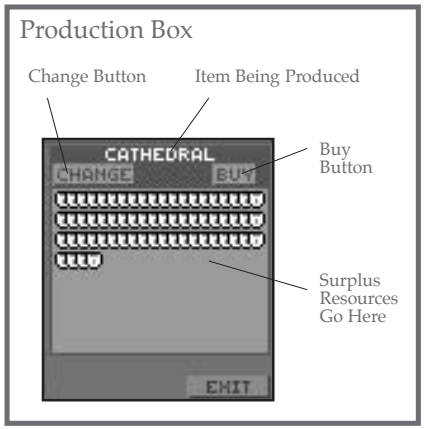
Change Production: For the IBM/DOS version, click the Change button to open the Production menu that shows the items that you can produce. For the Windows version, either choose the option "Change Production" from the City menu or double click the LMB on the name or icon of the item currently being produced. Then choose the new item to be produced from those available in the Production menu. Before making your choice you may read the Civilopedia entry for any item on the list. For the IBM/DOS version, select the item you wish to read about and press the Alt + H keys, or click on the item with the RMB. For the Windows and Macintosh versions, click on the Help button.

Once you have chosen the item to be produced, the production box changes size to indicate the resource cost of your selection and the name or the icon of the new item appears at the top of the box.

If you are producing an item that is no longer available from the menu, that production continues even after the item is completed. However, if you change production while producing an obsolete item, you loose the ability to return to producing it in this city.

Some Wonders on the Production menu may be marked with an asterisk (*) before their name. This indicates that the Wonder has been made obsolete by the advance of technology, but you may still build it.

If you are building a Wonder and another civilization completes it before you can, change production in the city where the Wonder was being built or the city will continue building it forever. You are taken to you city's display in order to make the production change.



Rush Jobs: You may rush completion of a partially built item by paying to complete it immediately. To rush completion for the IBM/DOS version, click the Buy button at the top right of the box. For the Windows version, choose the option "Rush Job" from the City menu or press the B key. A dialog box then opens showing how much money is required to finish the object by the end of the turn. Choose whether to rush the item or not. To speed the completion of an item in this manner costs at least 2 coins per missing resource. If no resources have gone into an item, i.e., the production box is empty, the cost of a rush job is doubled.

Items completed by rush jobs are available at the beginning of your next turn, so there is no advantage for rushing items that would complete on the next turn anyway. To judge whether an item can be completed next turn without rushing, compare the surplus resources the city is generating to the number needed for completion. For very expensive items, it may be useful to consult your City Status advisor from the Advisors menu for an exact count of the remaining cost.

Auto-Production: This is an option available from the City menu. If you choose it, your advisors will automatically decide what unit or improvement this city should produce. When a new unit or improvement is completed, the advisors automatically choose what to build next. You can retake control of production at any time by turning off the Auto-Production option. This option applies to only one city at a time. It must be selected for each city.

Sabotage: Enemy Diplomats may slip into your cities and destroy items partially completed. All resources currently invested in an item are destroyed and production starts over. Your only protection from this is to destroy enemy Diplomats before they can enter.

Disaster: Pirate raids are a type of disaster. Pirates destroy the partially completed item in the production box of coastal cities. The only defense against them is building the Barracks improvement.

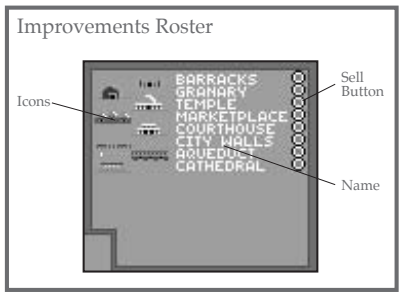
Improvements Roster

In this part of the city display is a list of the improvements and Wonders of the World that this city has built and that still exist. Items are listed one to a line and for each there is the item's icon, its name and a sell button.

Improvements and Wonders are discussed in detail in the separate manual sections Improvements and Wonders of the World. In addition, all improvements and Wonders are listed in the Civilopedia.

When a new improvement is built, it is added to the roster.

Improvements may be destroyed in a number of ways, and when this happens, they are removed from the roster. Improvements are also removed when sold.



You may sell an improvement to raise cash by pressing the sell button next to its name. See Selling Improvements for more information. Wonders of the World may not be sold.

Home City Roster

The units now on the map anywhere in the world that are supported by this city are shown here. These units are normally ones that this city has built, but it is possible to reassign units to another city. When a unit built elsewhere is assigned to another city, it is added to the second city's home city roster and removed from the roster of the first city.

Also noted here are any resources or food required by the unit for maintenance. The amount of resource and food support that units need depends on your civilization's type of government (see Types of Government).

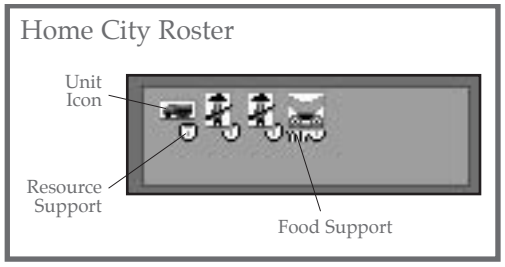
Units requiring resource maintenance are marked with a resource symbol below their icon. Resources needed for maintenance are unavailable for production and are shown to the left of any break in the resource line in the city resources window. If the city does not generate enough resources to maintain all of the units in the home city roster, units left unsupported are destroyed, beginning with the unit farthest from the city.

Settlers who require food support are marked with the number of food symbols they require.

Under two government types, the Republic and Democracy, each supported unit not in the home city causes one population point to become unhappy. These units are marked with a special symbol to note that they are the source of some unhappiness.

Information Window

Within this window a number of various types of information can be reviewed or accessed. Here you can quickly see which military units are defending the city,



what trade routes have been established, whether the city is causing pollution, and either version of the world map or a bird's-eye view of the city.

For the IBM/DOS version, several buttons are placed across the top of the window: Info, Happy, View, and Map. Click these buttons to call up the information you wish to see. The button currently on is shown in white.

For the Windows version, no buttons are present. Instead, the four information reports can be accessed from the City menu. The options on this menu are now called “General Information”, “Happiness Chart”, “Aerial View of City”, and “Area Map”.

Map/Area Map: Pressing this button calls up a small version of the world map. The city you are in is marked for reference as a white dot. Also marked on the map are the location of any cities with which you have established trade routes (shown as light green dots) and the location of units that make this their home city (light gray dots). The map may be useful for planning additional trade routes, assessing the danger of enemies, locating units you wish to disband, or deciding a sailing direction for newly launched ships.

View/Aerial View of City: This button opens the bird’s-eye view of the city that is seen when a new improvement or Wonder is built. As time passes, note that the architecture of the various dwellings improves. The people of the city stand in the foreground of the view.

Info/General Information: This is the most useful report and the default choice that appears when any city display is first opened.

At the top of the report are shown icons for all units currently in the city. Fortified units have a border around them and units on sentry duty are shown as faded icons. Fortified units or those on sentry duty may be activated from the report by clicking the LMB on the proper icon. When you return to the map display, these units can now be given orders.

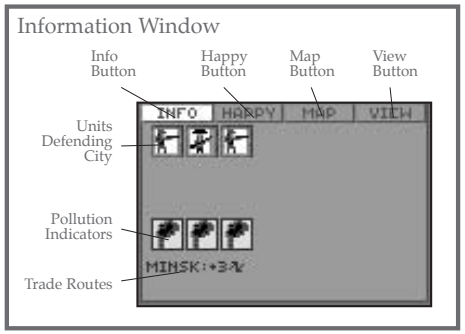
At the bottom of the window is a list of any trade routes the city has established. Each trade route is noted by the name of the city with which you are trading and the amount of trade generated. This trade is automatically included in the trade your city is generating, shown in the city resources window of the display.

As your civilization moves into the industrial age, pollution may become a problem. In the middle of this window, pollution indicators appear when the

city’s industry gets sufficiently large. The indicators are smokestack icons. Each smokestack indicates a 1% chance each turn of a nearby map square becoming polluted (see Industrial Pollution). There can be up to one hundred smokestacks present, indicating a 100% probability of pollution each turn. The presence of several smokestacks is a cue to reduce pollution or be prepared to clean it up. The alternative is eventual environmental disaster.

Happy/Happiness Chart: The Happiness Chart shows which factors are affecting the happiness of the city’s population. All people in a city beyond a certain number are unhappy before any modifying influences are taken into account. At the Emperor level of difficulty, only the first two people are content; at King level, the first three; and so on down to Chieftain level, where the first six people are content.

When the city’s population increases beyond these minimums, the new people are unhappy unless their condition is improved by a culture and standard of living that provides luxuries, religion and entertainment, they are coerced into contentment by martial law, or the presence of Wonders of the World lifts their pride and spirits.



The top row of the chart shows the happiness of the population before taking into account any of the factors that improve happiness.

The second row shows the effects of the luxuries that are provided to the city, if any. Two units of luxuries make one content person happy or one unhappy person content. A contented person is made happy before another unhappy person is made content.

The third row shows the effects of Temples, Cathedrals, and Colosseums. These improvements have the effect of making unhappy people content.

The fourth row shows the effects of martial law and military service. Under all governments except the Republic and Democracy, each military unit in a city (up to three) coerces one unhappy person into contentment. Any units imposing martial law are shown in this row. Under the Republic or Democracy, martial law does not work. Instead, each military unit not in its home city makes one

(Republic) or two (Democracy) persons unhappy. This is shown by "sad face" symbols in this row and under the units in the home city roster.

The fifth row shows the effects of any Wonders of the World, either in this city or elsewhere, that are influencing the population's happiness. For example, J.S. Bach's Cathedral changes two unhappy people into contented people for all of your cities on the same continent.

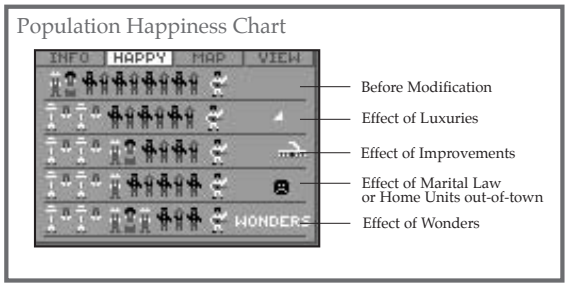
Specialists are contented people, and are taken from the ranks of the content or happy population when created. The effect of the increased luxuries created by Entertainers is included in row two.

The bottom row of the chart shows the cumulative effect of all factors on the happiness of the population. The status shown in this row is the same as that in the population roster at the top of the city display.

Examine this chart to understand what is affecting the happiness of the city and perhaps discover what else could be done if the city is out of balance. You may see where creating Entertainers, disbanding out of town units, bringing in more military units to impose martial law, or building a new improvement can bring the city back into order.

City Name

You may rename any of your cities whenever you wish. This may be useful when you capture a city and wish its name to be consistent with the names of cities you have founded.



For the IBM/DOS version, click the Rename button on the city display. For the Windows version, choose the option "Rename City" from the City menu. In both versions a dialog box opens where you can type in the new city name. Press the Enter key or OK button to accept the name.

CITY IMPROVEMENTS

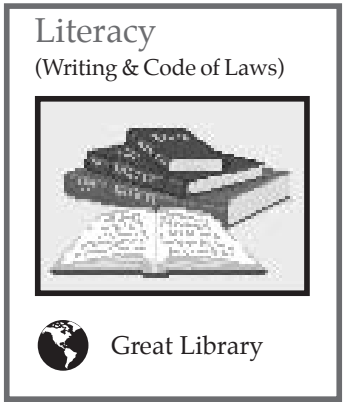
City improvements are the commercial, bureaucratic, educational, and public works infrastructure that make large and efficient cities possible. The potential size of a city is limited by inadequate provision of these facilities. For example, the dense population of New York is made possible by the subway system. Los Angeles is located in a desert and brings much of its water from sources hundreds of miles away.

In Civilization, improvements are also critical to the growth and importance of cities. Each of the improvements available provides some service or otherwise makes the city work more efficiently.

Building and Destruction

When beginning a new civilization, usually you may build only one type of improvement, the Barracks. As your civilization acquires new technologies, more improvements become possible. Each city may possess only one of each improvement. The improvements your city possesses are listed in the improvements roster on the city display. Once built, improvements (but not Wonders) may be destroyed by sabotage, disaster and capture, and may even be sold for cash.

Sabotage: Diplomats may enter a city and attempt industrial sabotage. This may result in the destruction of an existing improvement. The only defense against this type of attack is destroying the Diplomats before they can enter the city.



Disaster: Volcanos, Pirate Raids, Floods, Fires, and Earthquakes may destroy improvements in a city. There is no defense against Earthquakes, but Aqueducts prevent Fires, Temples prevent Volcanos, City Walls prevent Floods, and Barracks prevent Pirate Raids.

Capture: Some, all, or none of a city's improvements may be destroyed when it is captured by another civilization. When a city is completely destroyed, all improvements are destroyed as well.

Selling Improvements: You may sell an existing improvement to raise cash by pressing the sell button next to its name in the improvements roster of the city display. A dialog box appears showing how much cash you would receive for selling, normally 1 coin per resource invested. Choose whether to sell or not. If you sell, the improvement disappears from the city and the money is added to your treasury.

Selling improvements may be useful when you are short of money and threatened with the random sale of an improvement. It may also be useful when you are under attack with no reasonable chance of defending or recovering a city. By selling off its improvements, you reduce its value to the enemy and salvage something. You may sell one improvement per turn.

Improvement Types

An alphabetical list of improvements follows, including the benefit of the improvement and the technology that makes it possible.

Aqueduct: Cities without an Aqueduct may not grow beyond a size of 10 population points. In addition, Aqueducts prevent the disasters of Fire and Plague. Aqueducts require the advance of Construction, cost 120 resources to build, and cost 2 coins per turn to maintain.

Bank: Increases the luxuries and taxes generated by a city by 50%. It requires the advance of Banking and the city must already have a Marketplace improvement. The bonus from a Bank is added to that of an existing Marketplace and then applied. This bonus takes effect after all other considerations, including trade routes. Banks cost 120 resources to build and 3 coins per turn to maintain.

Barracks: New units built in this city are already veterans, increasing their attack and defense factors by 50%. Barracks prevent the disaster of a Pirate Raid. No technology is required to build Barracks. However, all existing Barracks become obsolete and disappear when you acquire the advances of Gunpowder and Combustion. In each case a new generation of Barracks may be built. The maintenance cost of Barracks is 1 coin at the Chieftain and Warlord levels. At Prince and King levels, the maintenance is 1 coin for the first generation, 2 coins for the second generation, and 3 coins for the third. At Emperor level, maintenance costs are 2/3/4.

Cathedral: A Cathedral makes four unhappy people content and is very useful for keeping a large city out of civil disorder. It requires the advance of Religion, costs 160 resources to build, and costs 3 coins per turn to maintain. The effect of all Cathedrals in your cities is increased if you possess Michelangelo's Chapel, a medieval Wonder of the World, until the achievement of Communism.

City Walls: City Walls triple the strength of a defending unit, except when attacked by a Bomber or Artillery unit. This tripling occurs after considering the effects of terrain and veteran status. Cities defended by City Walls do not suffer population loss when a defending unit is destroyed. Walls also prevent the disaster of Floods. They require the advance of Masonry, cost 120 resources to build, and cost 2 coins per turn to maintain.

Colosseum: The Colosseum is a large stadium for holding athletic contests and other events drawing crowds. Its presence makes 3 unhappy people content. It requires the advance of Construction, costs 100 resources to build, and costs 4 coins per turn to maintain.

Courthouse: Reduces corruption in a city by 50%. It requires the advance of the Code of Laws, costs 80 resources to build, and costs 1 coin per turn to maintain.

Factory: Increases the amount of resources generated by a city by 50%. A Factory becomes obsolete and stops working if a Manufacturing Plant is built in the same city. A Factory requires the advance of Industrialization, costs 200 resources to build, and costs 4 coins per turn to maintain. The effect of a Factory may be increased by the presence of a Hydro Plant, a Nuclear Plant, or a Power Plant. It may also be increased by the Hoover Dam, a modern Wonder of the World.

Granary: Cities possessing a Granary use up only 50% of their stored food to create new population. The storage box empties only by half. In addition, the Granary prevents a Famine disaster from destroying population. The Granary requires the advance of Pottery, costs 60 resources to build, and costs 1 coin per turn to maintain.

Hydro Plant: Increases the resources generated by a city by 50%. In addition, a Hydro Plant reduces the probability of pollution. A Hydro Plant may only be built by a city adjacent to a River or Mountain square. It requires the advance of Electronics, costs 240 resources to build, and costs 4 coins per turn to maintain.

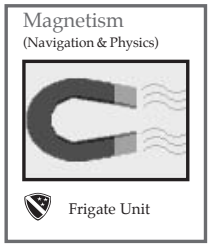
Library: Increases the knowledge production of a city by 50%. It requires the advance of Writing, costs 80 resources to build, and costs 1 coin per turn to maintain. The effect of all Libraries in your cities is increased if you possess Isaac Newton's College, a medieval Wonder of the World, until the achievement of Nuclear Fission.

Manufacturing Plant: Increases the resources generated by a city by 100%. It requires the advance of Robotics, costs 320 resources to build, and costs 6 coins per turn to maintain. Its presence makes a Factory obsolete, if present, and the Factory ceases to work. The effect of a Manufacturing Plant may be increased by the presence of the Hydro Plant, the Nuclear Plant, the Power Plant, or the Hoover Dam.

Marketplace: Increases tax revenue and luxuries by 50%. The Marketplace becomes available with the advance of Currency, costs 80 resources to build, and costs 1 coin per turn to maintain.

Mass Transit: In cities with Mass Transit, the population has no effect on pollution. Otherwise, when a civilization has acquired the Automobile advance, the population of its cities increases the probability of pollution. Mass Transit requires the advance of Mass Production, costs 160 resources to build, and costs 4 coins per turn to maintain.

Nuclear Plant: Like other types of power plants, the Nuclear Plant increases the resources generated in a city by 50%. A Nuclear Plant also reduces the day-to-day probability of pollution. However, a Nuclear Plant in a city suffering civil disorder risks a nuclear meltdown. The Nuclear Plant requires the advance of Nuclear Power, costs 240 resources to build, and costs 2 coins per turn to maintain.



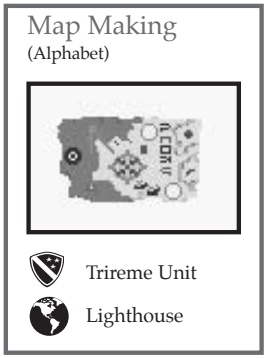
Palace: This is the administrative and governmental center of your civilization. The further any city is from the city containing the Palace, the more corruption is likely. You may build a new Palace in another city, but this causes the retirement of the first Palace and relocation of the government. If your Palace is destroyed, a new one may be built in any existing city. The Palace requires the advance of Masonry and costs 200 resources to build. Your original Palace costs nothing to maintain, but a new Palace costs 5 coins per turn.

Power Plant: Increases the resources generated by a city by 50%. However, it increases the probability of pollution significantly. The Power Plant requires the advance of Refining, costs 160 resources to build, and costs 4 coins per turn to maintain.

Recycling Center: The recycling center reduces the probability of pollution by two-thirds. It requires the advance of Recycling, costs 200 resources to build, and costs 2 coins per turn to maintain.

SDI Defense: The SDI (Strategic Defense Initiative) Defense protects the city from Nuclear units. Attacks by these weapons have no effect. This improvement becomes available with the Superconductor advance. The SDI Defense costs 200 resources to build and 4 coins per turn to maintain.

Temple: The Temple improvement becomes available with the Ceremonial Burial advance. Its presence makes one unhappy person content. With the additional advance of Mysticism, another person is made content by a Temple, for a total of two. A Temple prevents the Volcano disaster. Temples cost 40 resources to build and 1 coin per turn to maintain. The effect of a Temple may be doubled if your civilization possesses the Oracle, an ancient Wonder of the World, until the achievement of Religion.



University: The presence of a University increases the knowledge generated by a city by 50%. A University may only be built in a city that already possesses a Library. The University bonus is added to the bonus from an existing Library. Together they double the knowledge generated. Universities become available with the advance of the University. They cost 160 resources to build and 3 coins per turn to maintain. The effect of all Universities in your cities is increased if you possess Isaac Newton's College, a medieval Wonder of the World, until the achievement of Nuclear Fission.

WONDERS OF THE WORLD

As your civilization progresses through the years, certain advances make possible the building of Wonders of the World. There are 21 Wonders, 7 each for the three great epochs of civilization: Antiquity, the Middle Ages (including the Renaissance), and the Industrial Age (present and future). These Wonders are the extraordinary monuments of a civilization, bringing everlasting glory and other benefits to their owners.

A Wonder is a dramatic, awe-inspiring accomplishment. It is typically a great achievement of engineering, science, or the arts, representing a milepost in the history of humankind. Each Wonder is unique, existing only in the city where it is constructed.

In addition to the glory attached to owning a Wonder, each one has a specific, unique benefit. The people of your civilization are able to perform amazing feats, inspired by their pride in the possession of Wonders. For example, if your civilization possesses the Lighthouse, your ship units are able to move one additional map square per turn.

The benefit from a Wonder applies only to the civilization that possesses it. If a Wonder you build is lost when one of your cities is captured, the powers of the Wonder then apply to the conquering civilization. The same holds true if you capture a Wonder.

However, the benefits of the ancient Wonders and most of the Wonders of the Middle Ages may not stand for all time. Objects and accomplishments that awed the ancients may not similarly inspire the people of the Industrial Age. The achievement of later advances may end the benefits of older Wonders, regardless of whether your civilization or another makes the canceling advance.

Construction

Each Wonder may be built once your civilization achieves a specific technology. For example, when your civilization acquires Map Making, you may begin construction of the Lighthouse.

You may build a Wonder only if it does not already exist somewhere else in the world. If it exists in another city, it does not appear as an option in your production menu. If you are building a Wonder in one of your cities and the

same Wonder is completed elsewhere before you finish, you cannot complete your construction. Convert your production to something else.

Wonders are not destroyed when an enemy captures their city. However, if a city possessing a Wonder is destroyed, then that Wonder is lost forever and cannot be rebuilt.

Wonders are built in the same manner as any other city improvement with one exception. You may move a Caravan into the city of construction and accept the option "help build Wonder." All of the resources that went into the Caravan are added to the construction of the Wonder.

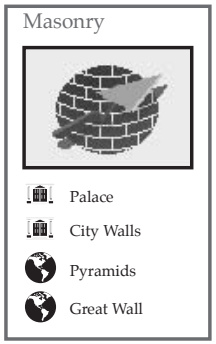
Wonders may be built in any city and more than one may be built in the same city.

Effects

Each Wonder has specific and general benefits. An example of a specific benefit is increased movement of your ships when you possess the Lighthouse.

General benefits are the glory that accrues to your civilization for possessing the Wonder, even after new technology makes it obsolete. Each Wonder that your civilization possesses adds to your civilization score. The presence of Wonders are significant when the top 5 cities in the world are measured. The presence of Wonders also influences the historians, such as Gibbon, who periodically rate the world's civilizations. Finally, Wonders also influence the decision of the people to improve your palace.

Antiquity



Colossus: The Colossus is a great bronze statue bestriding the gates or harbor mouth of the city. This amazing statue draws tourists from around the world, greatly increasing the trade of the area.

Trade is +1 in every city map square that is already generating some trade. The effect on tourism stops working after the development of Electricity and the trade benefit is thereafter lost. The Colossus requires the advance of Bronze Working and takes 200 resources to build.

Great Library: Begun as a hobby by a local ruler, the Great Library is an obsession for the city. Its agents scour the world for books and manuscripts, making the Great Library the largest repository of knowledge in existence.

The Great Library gives you any technology that two other civilizations have acquired. However, it stops working after the development of Electronics. It requires the advance of Literacy and takes 300 resources to build.

Great Wall: The Great Wall was built not so much to keep invaders out, but to retard their escape with any loot. The effect is to deter the aggressiveness of neighbors.

When you possess the Great Wall, other civilizations always offer peace during negotiations. However, the effect of the Great Wall ceases after the development of Gunpowder. It requires the Masonry advance and takes 300 resources to build.

Hanging Gardens: The magnificent Hanging Gardens are a great marriage of engineering and beauty. Architecturally brilliant layered tiers of gardens are ingeniously supplied with water. Any visitor is overwhelmed by the grace of this man-made garden of paradise.

Possessing this beautiful monument brings great pleasure to the people of your civilization and results in +1 happy citizen in each of your cities. This magical effect of the Hanging Gardens expires with the development of Invention because, thereafter, the gadgetry of the garden design becomes cheaply available to everyone.

Knowledge of the Hanging Gardens is acquired with the advance of Pottery, and the Wonder takes 300 resources to build.

Lighthouse: The construction of this immense Lighthouse not only creates the greatest navigational aid of antiquity, but triggers a birth of seafaring skills and traditions. The result is great achievements by your ships and captains.

Possession of the Lighthouse increases sea movement rates by 1 square for all of your ships. However, the effect of the Lighthouse ceases working after the development of Magnetism, a new navigational aid that puts competent sailing within the grasp of anyone. The Lighthouse requires the advance of Map Making and it takes 200 resources to build.

Oracle: Building the Oracle gives the beliefs of your civilization a unifying central dogma that increases its effect on the people. The auguries of the Oracle are transmitted through the local Temples, exerting significant control over the people's lives.

The Oracle becomes available with the advance of Mysticism and doubles the effect of your Temples in making unhappy people content. It stops working after the development of Religion, which appeals more widely to the growing literate, intelligent citizenry. The Oracle takes 300 resources to build.

Pyramids: The Pyramids are the greatest and oldest of the ancient Wonders. Their construction requires great government control of the entire nation to make possible the effort of their construction.

A civilization that possesses the Pyramids may change government type without going through a period of Anarchy. In addition, that civilization may select any type of new government, not just those for which it has made the correct advance. For example, the possessing nation may become a Democracy, long before it acquires the technology of Democracy.

The Pyramids require the advancement of Masonry and take 300 resources to build. However, the effects of the Pyramids expire after the advance of Communism is achieved.

The Middle Ages

Copernicus's Observatory: Working alone on cold nights in the tower of his cathedral, this Polish priest re-established that the Sun was the center of the Solar System, not the Earth. This fact had been recognized by ancient astronomers but lost in the Dark Ages, buried under superstition and religious dogma. Copernicus's findings were controversial but proven true, and were an important step in the rebirth of Western science.

Building Copernicus's Observatory doubles knowledge production in the city, after all adjustments for Libraries, Universities, and Scientists. However, this benefit stops working after development of the Automobile. The advance of Astronomy makes the Observatory possible. It costs 300 resources to build.

Darwin's Voyage: Partially from the research accomplished on his scientific voyage aboard the Beagle to the Galapagos Islands, Charles Darwin developed the theory of evolution that was published in his masterwork, The Origin of

Species. Darwin's arguments, and those of his contemporary, Alfred Russell Wallace, were so convincing that they were only disputed on philosophical grounds, mainly by religious fundamentalists. The theory of organic evolution was the foundation of all following research in biology.

The civilization that builds Darwin's Voyage immediately acquires two civilization advances, the one currently being researched and one other. The advance of Railroads makes Darwin's Voyage possible. The Voyage costs 300 resources.

Isaac Newton's College: Considered by many to be the greatest scientist of all time, Newton developed theories of universal gravitation that explained both the motion of heavenly bodies and the falling of bodies to Earth. He also wrote important works on calculus, optics, the spectrum of light, fluid mechanics, the motion of comets and the motion of tides, and he built the first reflecting telescope. For 32 years he was a professor of mathematics at Cambridge University.

Possessing Newton's College increases the knowledge benefit of all your Libraries and Universities. It may be built once you have acquired the Theory of Gravity, but stops working after the development of Nuclear Fission. The College requires 400 resources to build.

J. S. Bach's Cathedral: Johann Sebastian Bach was one of the great composers of the Western world. Born into a family of distinguished musicians, he was noted as a virtuoso performer during his life, but has become much more revered since his passing for the genius of his music. The majority of his compositions were written while he was serving the church, and most pieces were written for the organ and dedicated to the glory of his God.

Possessing Bach's Cathedral decreases unhappy citizens on the same continent by 2 per city. The Cathedral may be built following the advance of Religion and costs 400 resources. The power of Bach's music does not expire.

Magellan's Expedition: Ferdinand Magellan, a Portuguese navigator, led the first expedition that circumnavigated the globe. Sponsored by Charles I of Spain, he was searching for a westward route to the spice islands of the Moluccas. Along the way he discovered the straits at Cape Horn that bear his name. Unfortunately, he died in the Philippines fighting natives. Only one of his five original ships and few of his men reached home, but the expedition proved that the Earth was round.

Possessing Magellan's Expedition increases sea movement rates by 1 square for all of your ships. The expedition becomes possible after the advance of Navigation and never expires. It costs 400 resources to build.

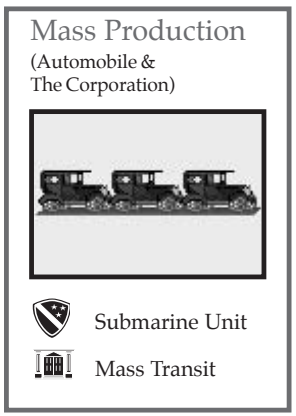
Michelangelo's Chapel: Michelangelo Buonarroti was perhaps the greatest of the Renaissance sculptors and painters. Working for the church in Rome and the Medici family in Florence, he is best known for his sculpture of David and the painting of the Sistine Chapel. He is renowned for the beauty of his work and the influence it had on succeeding generations.

You may build the Chapel after achieving the advance of Religion. Possessing it increases the benefits of Cathedrals throughout your civilization until the advance of Communism diminishes the strength of Religion. The Chapel takes 300 resources to build.

Shakespeare's Theatre: William Shakespeare, an English dramatist and poet, is considered the greatest of all playwrights. Little is known of his life and he seems not to have become rich or famous in his own day. But not long after his death his fame began to grow and his influence on the English language has increased with the renown of his plays, which are still performed regularly around the globe.

The Theatre may be built after achieving the advance of Medicine. Thereafter, all unhappy people in the city are content, until the advance of Electronics makes the Theatre obsolete. It costs 400 resources to build.

Industrial Age



Apollo Program: The culmination of the space race of the 1960s, the Apollo Program put several manned expeditions onto the Moon. Quickly overcoming many difficulties and dangers, The Apollo Program was one of the great technological achievements of the age. Its success suggests that humankind may not be restricted just to Earth, but may eventually expand into space.

The Apollo Program may be built after achieving the advance of Space Flight. It allows construction of space ships by any civilization having the technology

to build parts and also allows you to see the location of all cities in the world. The Apollo Program costs 600 resources to build.

Cure for Cancer: Of the diseases that continue to plague humankind, cancer remains one of the most feared and deadly. Despite huge efforts to find a cure for this malady, it continues to reap its toll each year. The developing science of genetic engineering offers new hope for a cure.

After the development of the advance of Genetic Engineering, you may work on the Cure for Cancer. Possessing the Cure creates +1 happy citizen in all cities of your civilization. The Cure for Cancer costs 600 resources.

Hoover Dam: Huge hydroelectric power sources were first developed in the United States during the 1930s and have since been built throughout the world. Converting the kinetic energy of falling water into electric power has proven to be a relatively cheap and environmentally sound method of generating electricity.

The Hoover Dam may be built after the advance of Electronics is acquired. The Dam provides electric power to all cities on the same continent, increasing the resources generated by the city by 50%. In addition, the Dam reduces the probability of pollution from these cities. The Hoover Dam costs 600 resources to build.

Manhattan Project: The Manhattan Project was the codename for the theoretical and practical development of atomic weapons. Once completed, the world's future immediately was in doubt because the weapons it made possible threatened extinction for all life on Earth. But these weapons also offered an umbrella of peace due to their destructive capability. Massive global war became obsolete because all participants were doomed, win or lose.

Now, surviving the Nuclear Age and environmental poisoning are the two greatest challenges of industrial civilization.

Once any civilization completes the Manhattan Project, all civilizations in the world may begin building nuclear weapons, if they have the proper technology. The Manhattan Project itself may be built once the advance of Nuclear Fission has been achieved. The Project costs 600 resources to build.

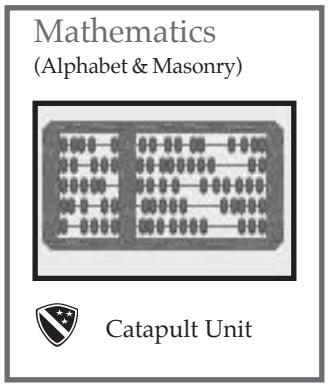
SETI Program: The search for extra-terrestrial intelligence is a research effort set up to find an answer for one of humankind's most nagging questions: Are we the only intelligent life in the universe? Being the first civilization to contact other intelligent life brings great glory and perhaps technological advantages.

The SETI Program may be built when your civilization acquires the advance of Computers. Thereafter, the knowledge generated by your cities is increased by 50%, unless the Program is destroyed or captured by a rival. The SETI Program costs 600 resources to complete.

Women's Suffrage: A phenomenon of the cultural, philosophical, and social changes that followed the Industrial Revolution has been a steadily increasing respect for the rights and abilities of women. Women demanded and won the franchise of the vote, first in Western Democracies, after demonstrating their ability to perform well almost any job while the men were off to war. This symbolic freeing from historic social hierarchies has led to increasing practical freedom, at least in the West.

Women's Suffrage becomes available after the advance of Industrialization. Under a Republic or Democracy, units away from their home city create one less unhappy citizen than normal for a civilization that possesses Women's Suffrage. It costs 600 resources to achieve.

United Nations: The United Nations is an international organization that meets to solve international problems through diplomacy. Its goal is world peace and security. It offers a forum for debate and also works to aid the economic and technical development of poorer nations.



Building the United Nations is a great achievement for a civilization. It is available after the advance of Communism. During negotiations with other civilizations, they always offer to make peace with you. This allows at least a temporary resolution to all wars you are engaged in. The United Nations costs 600 resources to build.

DISASTERS

Each game turn there is a chance that a disaster of some sort may strike one of your cities. A disaster may result in loss of population, destruction of a city improvement, or disruption of production. Some disasters may be prevented if your civilization has acquired certain advances or if the city has built a certain improvement. In these cases, the disaster does not occur or has no effect.

The possible disasters are described below. For each there is an explanation of why it occurs (if a reason exists), the effect on your city when it strikes, and what measures can prevent it, if any.

Earthquake: Earthquakes may strike any city that is built adjacent to Hills terrain. There is nothing that you can do to prevent this disaster. An earthquake destroys one city improvement.

Famine: Famine strikes randomly. It can be prevented by building a Granary improvement. If it strikes a city with no Granary, all food in the food storage box is lost and the city's population is reduced.

Fire: Fire can hit any city at any time. It can be prevented by building an Aqueduct improvement. Fire destroys one city improvement.

Flood: Flood can strike any city built next to or on a River square. It can be prevented by building a City Walls improvement. Flood reduces city population.

Pirate Raid: Pirates may strike any city built adjacent to an Ocean square. Pirates can be prevented by building a Barracks improvement. Pirates remove all food from the food storage box and destroy whatever is being built in the production box. All resources spent so far in production are lost.

Plague: Plague may strike any city at any time. It can be prevented by acquiring the advance of Medicine or by building an Aqueduct improvement. Plague reduces the city's population.

Volcano: A volcano may erupt and damage any city built adjacent to or on Mountain terrain. The effects of a volcano may be negated by building a Temple improvement in the city. Volcanic eruptions reduce the city's population unless negated.

THE WORLD

The World Map

The world surrounding your civilization is an entire planet consisting of several continents, islands, and oceans. A totally new planet can be generated for each game or your civilization can attempt to prosper on the historical Earth itself. All planets are bordered by impenetrable polar caps to the north and south, but are not bounded east and west. Moving off the east edge brings you back onto the west edge.

As mentioned in the section on Pre-Game Options, new worlds are Earth-like in terms of temperature, moisture, and land mass. These factors can be adjusted if you wish to experiment with different combinations.

You begin with almost no knowledge of the world. The wandering tribe that is the ancestor of your civilization (represented by one or more Settlers units) has explored only that part of the world that it occupies or can see nearby. The rest of the world and the other civilizations putting down their roots are hidden, over the mountains, through the forests, and across the seas. As your units move and explore, they discover more of the world's geography, important resource sites, minor tribes, and, eventually, the evidence of rival civilizations.

World Geography

The world is divided into small independent parts known as squares. Each square consists of a unique type of terrain. Each type of terrain has its own economic usefulness, effect on movement, and effect on combat. Detailed information about the terrain types is provided below and in the Terrain Chart that follows. This information can be obtained from two other sources: from the Civilopedia menu and from the map display. Click the RMB on any map square to obtain information about its terrain.

The economic usefulness of the various terrain types is important when selecting city sites. The terrain that is close to a city produces the food, resources, and trade the city needs to grow and be productive. Some terrain types are more valuable than others. Some may be irrigated or mined for increased economic value, and others may be converted into another type of terrain (for an explanation of irrigation, mining, and terrain conversion, see Settlers, page 90).

When selecting sites for new cities, consider the terrain types that are within the radius of the prospective city (see The City Radius, page 45). The best city sites offer immediate food, resource, and trade production, plus the potential for long term development.

A brief description of the terrain types follows.

Arctic: Frozen glaciers of ice and snow found near the north and south poles. No food, resources, or trade can be obtained here.

Desert: Very dry region that can be developed to be marginally productive. There are some resources present that can be mined, food can be produced if the desert is irrigated, and roads generate some trade.

Forest: These woodlands produce a modest mixture of food and resources. If more food production is needed in the area, they can be converted into Plains.

Grassland: These open lands have especially thick topsoil making them excellent food producing areas. Food production can be increased by irrigation. Roughly half of the Grasslands also have some resources (shield symbol), making them excellent city sites. Grasslands may be converted into Forests for increased resource production.

Hills: An area of rolling hills that offers easy access to minerals, sources of water, pastures, and some possibility for agriculture. When mined, Hills produce excellent resources. They also produce some food and can be irrigated if necessary. Irrigating Hills allows the irrigation to pass on to further squares that may be otherwise cut off from water.

Jungle: These areas of rain forest and dense jungle produce relatively poor amounts of food and no resources. However, they can be made much more valuable by conversion into either Grasslands or Forest. For this reason, the long-term potential of a city site containing several Jungles is good.

Mountains: This very rugged terrain can only produce a small amount of resources but this can be increased by mining. Mountains make the best defensive terrain, but the production is so low that they make a poor economic choice for the site of a city.

Ocean: Oceans produce small amounts of food, but substantial trade. Only ships or aircraft can enter Oceans. Landlocked Oceans are really lakes but are treated like other Oceans in all respects.

Plains: These open areas differ from Grasslands in having poorer soil but better resources of timber and minerals. They are poor food producers unless irrigated. Due to the presence of resources, they make good choices for city sites. Plains may be converted into Forests.

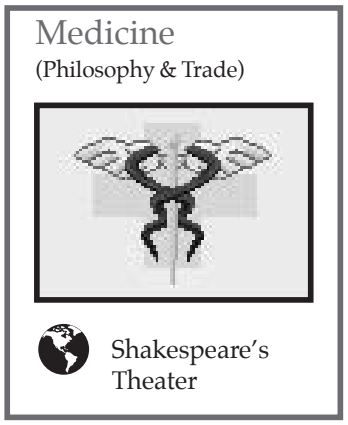
Rivers: Rivers are great sites for starting cities and civilizations due to the richness of riverbank soils and natural trade routes for boats. However, only about half of the River squares have resources. Rivers are as good as Grasslands for producing food and always generate trade. River terrain may be irrigated to increase food production. It was no accident that the first civilizations sprang up along rivers.

Swamp: These coastal wetlands and flooded interior lands produce only a small quantity of food. Like Jungles, however, they can be converted into Grasslands or Forest.

Tundra: These sparse lands of permafrost produce only a small amount of food from grazing animals. There is no agriculture or use for irrigation. These areas cannot be converted to other terrain and make very poor city sites.

Special Resources

Special resources can occur in many terrain types and add significantly to the economic value of the terrain. The location of these resources is marked by distinct symbols that are uncovered as the map is explored. More detailed information about special resources can be found on the Terrain Chart in the Technical Supplement or under the entry for their base terrain in the Civilopedia. A brief description of the special resources follows.



Coal (Hills): Coal deposits represent rich locations of coal or metal ores. These areas produce greatly increased resources, especially when mined.

Fish (Ocean): Fish represent the location of underwater banks and reefs where currents and nutrients create excellent fishing grounds. Fishing grounds produce increased amounts of food.

Game (Forest and Tundra): The presence of game indicates excellent food sources available

or the potential for good grazing. Game areas produce additional food. A Forest-Game square can be converted into a Horse square.

Gems (Jungle): Gems indicate the presence of precious stones, ivory, spices, salt, or other valuable commodities. These are good trade items and, therefore, the square generates substantial trade. A Jungle-Gems square can be converted into a Grassland square and then a Forest-Game square.

Gold (Mountain): Gold represents a bonanza of gold or silver. The value of these deposits produces tremendous trade.

Horses (Plains): Horses represent an increase in resources due to the benefits of using domesticated animals such as the horse or oxen to do work. For all but the most recent periods of history, animals were an important source of lifting and pulling power. A Plains-Horses square can be converted into a Forest-Game square.

Oasis (Desert): The oasis is a very fertile island in the desert that takes advantage of the presence of some water and rich local nutrients. The result is an area that produces substantial quantities of food.

Oil (Swamp): Oil represents the presence of mineral wealth, especially petroleum. The result is a substantial quantity of resources. Oil resources cannot be improved by mining. A Swamp-Oil square may be converted into a Grasslands square and then a Forest-Game square.

Note: If you convert terrain containing a special resource into another terrain type, the original special resource is lost. In some cases mentioned above, a new special resource may appear in the new terrain.

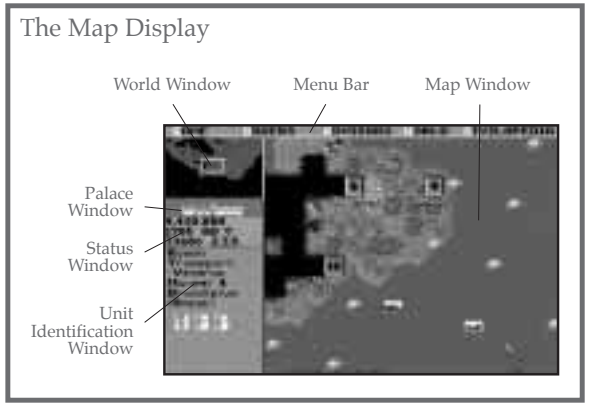
Minor Tribes

During exploration, minor tribes that have not yet advanced to be civilizations may be discovered in the world. These are represented by a small hut symbol. If you enter a minor tribe's village by moving onto the hut, one of a number of things may happen: you may discover valuable metals (coins), the tribe may become a mercenary unit in your army, you may discover a scroll of ancient wisdom that advances your civilization, your magnificence may inspire them to become civilized and found a new city in your empire, or they may prove to be extremely violent barbarians.

THE MAP DISPLAY

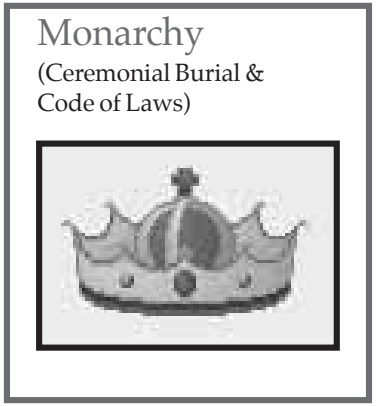
This is the display most commonly used during play. From here you control the movement and combat of units throughout the world, monitor the moves and development of other civilizations, and summon the reports of advisors. From the map display you can examine the known geography of any part of your empire or those of your rivals. For the IBM/DOS version, the map display consists of six parts: the map window, the world window, the menu bar, the palace painting, the status report, and the unit identification window. For the Windows and Macintosh version, the palace painting, status report, and unit identification window are combined into one status window.

Map Window



The large map window in the display shows one part of the world map in detail. Here you can examine the terrain, control the movements of units, scout sites for new cities, and prepare war plans.

When your civilization is just getting started, most of the world is unknown. The map is covered and hidden from view. As your units move and explore, the hidden areas are discovered and the map fills in. It is useful to uncover the world quickly to find good areas for expansion, absorb any minor tribes nearby, locate opposing civilizations, and determine likely avenues of approach by enemies.



There are a number ways to quickly change maps and otherwise look at different parts of the world. These are described below.

Scroll the Map: Scroll around the world to change the part visible in the map window. Click the LMB on any visible map square and the map scrolls, centering on the square you selected. For the Windows version, the map window scroll bars work normally except for one feature. The horizontal slider (the box on the horizontal scroll bar) always resets to the middle of the scroll bar. This happens because the world wraps continuously to the left and right and the map is always centered in the window relative to the box. See the section below about the World Window for another way to quickly scroll the map.

Center on Unit: Press the C key to center the map on the unit now waiting for orders (blinking), regardless of where it is in the world. Even if the waiting unit is not visible, the map scrolls so that it appears centered. For the Macintosh version press the CMD + J keys. For Windows, press the J key.

Find City: You can center the map on any known city in the world. For the IBM/DOS version, choose the option "Find City" from the Game menu or press the Shift + ? keys. For the Windows version, choose the option "Find City" from the File men or press the Ctrl +F keys. For the Macintosh version press the CMD + ? keys. For all three versions, type in the name of the city and press the Enter key. You need not type in the entire name of the city, just enough letters to distinguish it from any other city in the world. The map scrolls and centers on the city. If you have not yet discovered the location of a city, it cannot be found using this method.

World Window

The Map Display (Windows Version)

This window in the top left of the display shows a map of the entire world. It is centered on the part of the world currently shown in the map window. A box is positioned on this world map (colored white in the IBM versions) to show what part is now visible in the map window.

In the early days of your civilization, while most of the map is still unknown, the world window is of little help in showing where you are located in relation to other islands and continents. Because this window centers on the map display, if most of the world is hidden you cannot know where the polar caps are or even what hemisphere you occupy. You may be quite near one of the polar caps but not know it. After some exploration, you can better judge your location and that of your rivals.

Mysticism
(Ceremonial Burial)

Oracle

Map Scrolling: You can use the world window to speed the scrolling of the map display. Place the mouse pointer in the world window on the part of the world that you wish to center in the map window and click the LMB. The world window shifts and the map window scrolls to center on the position you pointed to.

Menu Bar

The menu bar is found across the top of the map display. From here orders may be passed to units and various reports from advisors may be summoned. There are five menus available for the IBM/DOS version: Game, Orders, Advisors, World, and Civilopedia. For the Windows version, there are eight menus: File, Edit, Orders, Advisors, World, City, Civilopedia, and Help. For the Mac there are seven - (Same as windows, but without "Help").

The Orders menu lists any special commands that can be given to the unit waiting for orders, in addition to normal movement commands. Refer to the manual section Additional Orders for a description of the commands possible.

The Advisors and World menus contain special reports that can be requested from your various advisors. Refer to the manual section Advisors/World Reports, page 100, for a description of these reports.

The City menu is available only for the Windows and Macintosh versions. The options listed on this menu are discussed in Chapter 2. The Edit menu is also available only for these versions. The only options that function in the game apply to the world window and status window. Selecting these options hides or opens these windows. If you close these windows they can only be opened again from the Edit menu.

The Civilopedia menu gives access to the on-line encyclopedia of Civilization. Use this to quickly obtain information on many different topics such as technology advances, military units, terrain, etc. See the manual section Civilopedia for a description of the information available.

The following options are available from the Game menu for the IBM/DOS version and the File menu for the Windows and Macintosh versions.

Revolution!: To change your civilization's type of government, you must have a revolution. The government goes into anarchy for a period of turns and then a new type of government may be chosen. You must have acquired specific technologies to choose a type of government other than Despotism. For a detailed explanation of this option, see Revolution.

Tax Rate: The trade that cities generate arrives as luxury goods, tax revenue, and new ideas (technology research). Here you can change the percentage that becomes tax revenue. See Trade Rates for more information.

Luxury Rate: Choose this option to change the percentage of trade brought in as luxury goods. See Trade Rates for more information.

Find City: Choose this option to locate a city in the world. Type in the name of the city you wish to find. The map window centers on the city, unless the city is one that you have not yet discovered.

Navigation
(Map Making & Astronomy)

Sail Unit

Magellan's Expedition

Options: This choice opens the Options submenu. From here you may turn on or off some game features. Features available are Instant Advice, Autosave, Animations, Sound, Enemy Moves, Civilopedia Text, and End of Turn. A check mark next to the feature indicates that it is on. Choosing an option that is on turns it off and vice versa.

Instant Advice provides some helpful hints for new players. The Autosave feature automatically saves your game every 50 turns. Animations may be on or off. Sound effects and music may be toggled on or off. When Enemy Moves is on, you see the moves of enemy units adjacent to your units and moves that occur on

the part of the map currently visible. When this option is off, you see only the enemy moves that cause combat. Turning off enemy moves may speed play. Civilopedia Text turns on or off the first page of information about all entries. When End of Turn is on, a message reports the end of each turn and must be cleared for the game to continue. If you have no active units, this message appears whether toggled on or off. Palace turns on or off the spontaneous improvements to your palace by the people.

Save Game: Choosing this option stops play to save your game. For the IBM/DOS version, follow the prompts for entering the drive where you wish the game to be saved. Each disk may contain only four saved games, plus six autosaved games. For the Windows and Macintosh versions, games may be named and saved in the normal manner. The number of saved games in these versions is limited only by disk capacity.

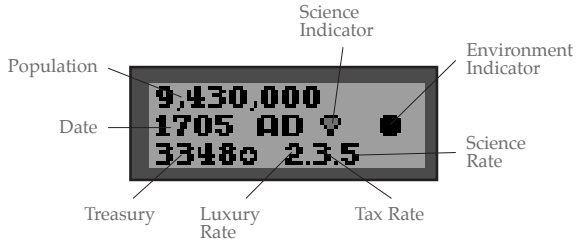
Retire: Ends the history of the civilization you now rule, calculating your score. If the score is high enough, you may enter the Hall of Fame. Note that your civilization is lost if not saved first.

Quit: Ends the history of the civilization you rule. No score is calculated and your civilization is lost if not saved first.

Palace Window

This window presents a miniature rendition of your palace. Its breadth and grandeur is a depiction of how well your civilization is progressing. If your civilization prospers and grows, the people recognize the glory of your leadership by periodically improving and expanding your palace. The relative magnificence or shoddiness of your palace is displayed for you, your advisors, and international emissaries to see.

The Status Report



For more information on the palace, see the section Palace Window.

World Peace Bar: Above your palace there may appear a white bar indicating turns of world peace. World peace exists when no civilizations are at war. Each turn of peace is worth 3 points toward your civilization score.

The Status Report

The entries and symbols here report the current date and several facts concerning the status of your civilization.

Date: The date is reported in years plus the notation BC or AD. The normal game begins in 4000 BC. Each turn represents the passing of so many years, depending on the current date.

Treasury: The number of coins in your treasury.

Population: The size of your civilization's population.

Trade Rates: The three numbers separated by periods are your trade rates. The first number is the percentage of your trade that provides luxuries. The second rate is the percentage that becomes coins of tax revenue that are added to the treasury. The third rate is the science rate, or the percentage of trade devoted to learning new technology.

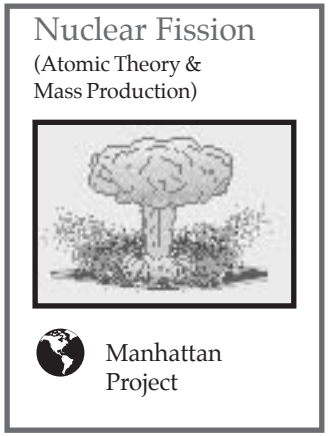
Luxury goods are the cultural pleasures like music, art, sports, and the theater that people enjoy in their leisure time. The more luxuries that can be provided, the more happy citizens in your cities.

Tax revenue goes into the treasury and is primarily used to maintain existing city improvements. Excess taxes over maintenance needs accumulate in the treasury and can be spent later.

The more new ideas and scientific research, the faster new technology is acquired.

Each of the three byproducts of trade has its benefits. As time passes and cities grow, you may have to adjust the trade rates to provide a minimum amount of taxes and science research while providing more luxuries to keep the population sufficiently happy. To adjust trade rates, pull down the Game menu (DOS) or File menu (Windows and the Macintosh) and choose either the "Tax Rate" or "Luxury Rate" option. By setting these two rates, the science rate is set by default.

Scientific Research: This indicator, shaped like a light bulb, shows how near you are to making a civilization advance. The nearer you get, the more the light bulb brightens. When the bulb is bright yellow, it is on, indicating that you have acquired a new technology. Once the new idea is reported and your scientists are sent off to study something else, the light bulb is turned off. As your scientists progress, it gradually brightens again. For more information on civilization advances, see Science Advisor.



Environment: The environment indicator is the sun and its color shows how great is the risk of global warming. When there is no risk of global warming, the sun indicator is not present. With the first case of pollution, the sun indicator appears colored dark red. If pollution continues, the color gradually changes to light red, yellow, and then white. If pollution is not brought under control when the indicator is white, the planet suffers a bout of global warming and then the indicator reverts to a cooler color reflecting the new equilibrium.

Pollution and environmental problems can also be caused by nuclear reactor meltdowns and fallout from nuclear weapons. For more information on pollution and global warming, see Planetary Caretaking.

The Unit Identification Window

The information reported here refers to the unit currently waiting for orders. This is the unit blinking. If the unit is not visible, press the Center key to center the map so that it is. For the IBM/DOS version, press the C key; for the Windows version, press the J key; for the Macintosh version, press the CMD + J keys.

The following information is shown.

Nationality: The name of your civilization and the one to which the unit belongs.

Unit Type: The type of unit and whether it is a veteran or not.

Movement: The number of movement points the unit has remaining to use. If you are finished moving a unit that has movement left, press the No Orders key (the Spacebar for all versions, or the N key for the Windows version, or the CMD + N keys for the Macintosh version) to skip to the next unit.

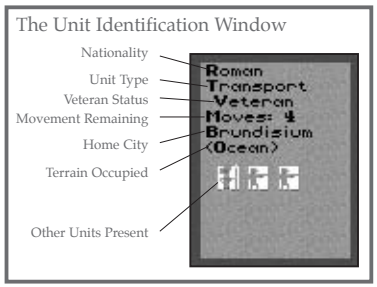
Note that points are shown in thirds after the decimal point when moving along roads because roads triple movement. For example, a unit that begins with 1 movement point and moves one square along a road would be shown with .2 movement points remaining.

Also, remember that units beginning on a square containing a railroad and moving along the railroad spend no movement points.

Home City: The name of the city that is supporting the unit and normally the city where it was built. You may transfer a unit to another city by moving it there and pressing the Home City key (the H key for both IBM/DOS and Windows versions and the CMD + H keys for the Macintosh version). This may be useful when one of your cities is threatened with capture because all units supported by a captured city are destroyed.

Terrain: The terrain type of the square the unit is currently in. This terrain report disregards the presence of a city but does mention other improvements such as irrigation, roads, railroads, etc.

Other Units: At the bottom of this window are shown any friendly units that also occupy this square. Units within a heavy black border are fortified. Units that are faded out are on sentry duty.



SETTLERS, SOLDIERS, AND ENVOYS

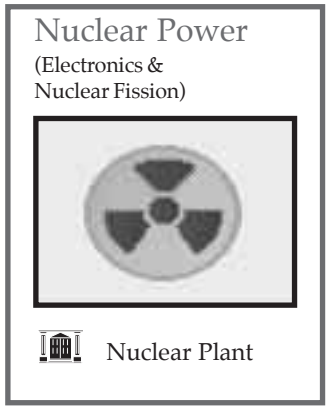
As ruler of your civilization you decide what military units to build, where to deploy them, and when to fight. In addition you control parties of Settlers looking to found new cities, Diplomats, and Caravans seeking to establish trade routes.

Through the years, the majority of your time is spent moving and positioning armies. A strong military is required first for defense against rivals and barbarians. They are also the eyes of your civilization, exploring the world as they move. They can also serve you by defeating the armies of your rivals and conquering their cities.

Armies can be ground military units (Legions, Cannons, and Armor for example), naval units (Triremes, Ironclads, Battleships, etc.), or air units (Fighters and Bombers). Also available are four special units: Settlers, Diplomats, Caravans, and Nuclear units. All unit types available are described in the Military Units section of the Civilopedia.

After founding your first city, you may have the technology to build only two types of unit, Militia and Settlers. As your civilization acquires new technology, additional unit types become available for building. All new units appear at the city where they are built and may be moved from that point.

All military units and Settlers have an attack factor (A), defense factor (D), and movement factor (M). The attack and defense factors indicate the army's relative strength when attacking and defending. The movement factor indicates how far the unit may move. In addition to moving and fighting, there are other orders that a unit may be given.



Movement

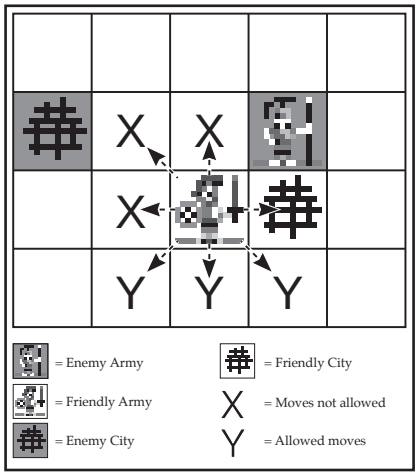
Each turn, you may give orders to your units, one at a time. The orders that may be given to a unit are found in the Orders menu. The unit waiting for orders blinks on the map. There are several order options available: move the unit across the map up to the limit of its movement factor, skip the unit if you prefer to move it later in the turn, or have it do nothing this turn.

In addition you may order most units to fortify or go on sentry duty. Fortified or sentry units no longer require orders. In future turns they carry on and do not blink, waiting for orders. If you wish to move these units later, they must be activated individually.

Moving Units: Units may be moved up to the limit of their movement factor. The cost to enter a map square depends on the terrain. Roads and Railroads speed the movement of ground units. When an army is unable to complete a movement order because it doesn't have enough movement points to proceed, its movement is finished for the turn. The map then centers on the next unit waiting for orders.

Units may be moved across the map in all versions by using numeric keypad keys 1-9, but not 5. Units may be moved in any of eight directions corresponding to these eight outside keys. For example, pressing the 2 key moves the unit one

Movement Restrictions Diagram



Notes:

1. X moves are okay if those squares already contain an army from your civilization.
2. Movement restrictions do not apply to ships, air units, diplomats, and caravans.

square towards the bottom of the map. For the IBM/DOS version, you may also click the RMB on a square adjacent to the moving unit and it moves to that square.

For the Windows and Macintosh versions, there is a different way to move using the mouse. Place the mouse pointer on the active unit and move it around

on top of the unit. As you do so, the pointer changes into a direction arrow pointing toward adjacent squares. When the arrow points in the direction you wish to move the unit, click and the unit moves to the adjacent square.

Wait Orders: To skip a unit temporarily, press the Wait key (the W key for the IBM versions or the CMD + W keys for the Macintosh). This passes you on to other units that need orders and returns you to the skipped unit after all others have had a chance to move.

No Orders: To skip a unit for the turn, press the No Orders key (the Spacebar for all versions, the N key for the IBM versions, or the CMD + N keys for the Macintosh). The map centers on the next unit needing orders.

Activating Units: Fortified units and those on sentry duty must be activated to receive movement orders. Place the mouse pointer on the square and click the left mouse button. This opens a menu displaying all units in the square. Click again on the icon of any unit you wish to activate. Fortified or sentry units within a city must be activated from the city display — see page 60. Sentry units are also activated when enemy units move into an adjacent square.

Philosophy
(Mysticism & Literacy)

Movement Restrictions: Ground units (all non-ship, air, or nuclear units) normally move only on land. They may move over sea squares, but only by naval transport (see below). Ships may not enter squares entirely made up of land except cities that are on the coast. Ground and ship units may not enter or attack a square containing an enemy Bomber unit (exception: see Diplomats below). Air units may move over land and sea squares, but must land on a friendly city square or Aircraft Carrier unit to refuel before their movement points expire.

Ground units may not move from one square adjacent to an enemy army or city directly to another such square. The prohibited square may be adjacent to the first enemy army, another army (even one from another civilization), or any enemy city. Ground units may move into such a controlled square if a friendly unit or city is already there. Air units, ship units, Diplomats and Caravans ignore these restrictions. See the Movement Restrictions Diagram for examples.

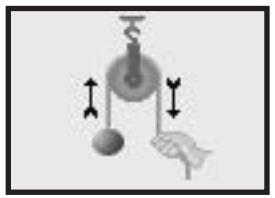
Naval Transport: Ground units may be carried over sea squares only by Triremes, Sails, Frigates, or Transports. See the following section on Military Units or refer to the Civilopedia for specific information about these ship units.

Units may load onto a ship by moving onto it from an adjacent land square. Also, units on sentry duty in a city with a ship automatically load when the ship leaves. Units aboard ship are on sentry duty unless activated by the presence of adjacent enemy units. When ground units are being carried by ships, the icon of the ship on the map is elevated slightly and appears to be stacked on top of other units. When considering an attack against enemy ships, first attack those that appear to be carrying other units. When a ship is destroyed, all of the units it is carrying are lost as well.

Units may unload when activated from sentry duty and adjacent to land. They can be activated by adjacent enemy units, by the normal method of activation, or by pressing the Unload key when the transporting ship is blinking. (Press the U key for the IBM/ DOS and Windows versions or the CMD + U keys for the Macintosh.)

GoTo Order: Units can be given orders to move to a distant square by using the GoTo command. When the unit you wish to give this order to is active, choose the option "GoTo" from the Orders menu. This changes the mouse pointer into the GoTo icon. Move the GoTo pointer to the square where you wish the unit to move and click on the destination with the LMB. The unit will begin moving to that destination and continue to do so each turn until it reaches the square. Be aware that units moving a long distance under the GoTo order may not follow roads or railroads if available. Units using the GoTo command move at the road movement rate when traveling on railroads.

Physics
(Mathematics & Navigation)



Combat

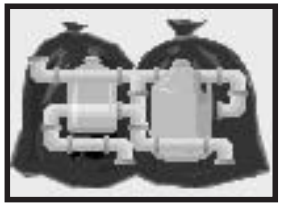
Combat occurs when a unit from one civilization attempts to enter a square occupied by a unit of another civilization. When this happens a battle is immediately resolved, resulting in the destruction of one army or the other. When there is more than one unit in the defender's square, the unit with the highest defensive strength defends. If it loses, then all other armies stacked with it

are destroyed as well (exception: see Improvements below). Successful attackers that have movement points remaining after combat may continue moving normally.

The important factors in combat are the attack and defense strengths of the combatants, the presence of veteran units on either side, the terrain occupied by the defender, and any defensive improvements in the square. After all of these factors are considered, the combat is resolved as a simple calculation.

The total modified attack and defense factors are combined and the probability of either side winning is the ratio of each sides factor compared to the total. For example, if a Chariot (attack factor 4) attacks a Phalanx (defense factor 2), the total of the factors is 6 (4 + 2). The Chariot has a 66% chance of winning (4 out of 6) and the Phalanx 33% (2 out of 6). If the both units were veterans, the odds are 6 out of 9 for the Chariot and 3 out of 9 for the Phalanx. If both are veterans and the Phalanx is behind City Walls (which triples the defense factor), the odds are 6 out of 15 for the Chariot and 9 out of 15 for the Phalanx.

Plastics
(Refining & Space Flight)



Spaceship Component

Shore bombardments, city attacks, nuclear attacks, air battles, and bribing enemy armies are special types of combat.

Attack Factor: The basic attack strength of all armies. This full strength is brought to bear so long as the army has at least one movement factor remaining for movement. Armies with less movement available may still attack but are penalized. Armies with high movement rates may make several attacks each turn at full strength.

Defense Factor: The basic defense strength of all armies.

Veteran Status: Veteran units have their attack and defense strengths increased by 50% before any other modification. Armies become veterans when built at cities containing the Barracks improvements, or they may become veterans after winning a battle (50% chance).

Terrain: Many of the world terrain types increase the strength of defenders. See the Terrain entries in the Civilopedia for details.

Fortified Armies: Ground units may fortify themselves, increasing their defense strength by 50%. A unit that has any movement points remaining may be ordered to fortify on any land square by pressing the Fortify key (the F key for the IBM/DOS and Windows versions or the CMD + F keys for the Macintosh).

Improvements: Units within a Fortress have their strength doubled after all other modification. Units inside a city containing City Walls are tripled in strength against all attackers except Bomber and Artillery units. Only one unit per attack may be lost when multiple units are defending Fortresses or cities. Cities protected by City Walls do not suffer population losses when a defending unit is destroyed.

Attacking Cities: When a defending unit in a city is destroyed by ground attack, other defending units present are not destroyed. However, the population of the city is reduced by one point unless the city is protected by City Walls. Population loss does not result from naval or air attack, but is caused by nuclear attack.

Naval Bombardments: Naval units with attack factors, other than Submarines, may attack enemy units on adjacent land squares, including cities. Naval units in cities may defend against attack.

Nuclear Attacks: Nuclear attacks occur when a Nuclear unit attempts to enter a square occupied by enemy units or an enemy city. In either case, all units, regardless of civilization, in the target square and adjacent squares are destroyed. In addition, a city loses half of its population. Nuclear attack can only be stopped by the presence of an SDI Defense improvement in a city.

Air Battles: Bomber units may only be attacked by Fighter units. This makes Bombers excellent for pillaging. Bombers prevent enemy units other than Fighters from entering or attacking the square they occupy. Bomber and Fighter units do not help defend cities that they occupy. If the city is entered, they are destroyed.

Additional Orders

Units may be given a number of other orders besides movement (and combat caused by movement). Settlers and Diplomats may be given unique orders explained later. The orders that may be given to an active unit are listed in the Orders menu. Orders that are faded out may not be given to the active unit.

Home City: Orders a unit to change its home city. Move the unit to the desired new home and press the Home key (the H key for the IBM/DOS and Windows

versions and the CMD + H keys for the Macintosh). Air units in flight may use this key to move to the nearest friendly city. Press the Home key while the air unit is in flight and it immediately moves to the nearest friendly city or Aircraft Carrier. If the air unit does not have enough movement remaining to reach the nearest base, it crashes instead.

Sentry: A unit on sentry duty is marked by a faded icon on the map. It is inactive and no longer blinks each turn waiting for new orders. Sentry units are activated as explained previously. Sentry units automatically board any transporting ship that leaves a city they occupy. To put an army on sentry duty, press the Sentry key (the S key for the IBM/DOS and Windows versions and the CMD + E keys for the Macintosh).

Disband: This order kills the unit receiving it, removing the unit from the map and city records. To kill a unit, press the Disband key (the Shift + D keys for the IBM versions and the CMD + D keys for the Macintosh).

Pillage: This order destroys terrain improvements present in the square the army occupies in the following order- irrigation or mines first, then railroads, and then roads. It takes three turns of pillaging to remove all improvements from an irrigated square containing a railroad. To pillage, press the Pillage key (the Shift + P keys for the IBM/DOS and Windows versions and the CMD + P keys for the Macintosh).

Settlers

Settlers are groups of your most resourceful and adventurous citizens. As independent pioneers they perform two critical functions for your civilization: they found new cities and serve as engineers.

Settlers are produced like any other unit with one exception. When a Settlers unit is completed, the population of the producing city is reduced by one point. Don't produce Settlers at a city containing only one population point because the city disappears when its population is absorbed into the new Settlers unit. This is a way to eliminate a city that is in a poor or inconvenient location.

New Cities: To found a new city, move a Settlers unit to the desired location and press the Found New City key (the B key for the IBM/DOS and Windows versions or the CMD + B keys for the Macintosh). The Settlers unit disappears because the people it represents have become the first population point of the

new city. However, in the future the new city can be ordered to produce more Settlers that can be used to found additional cities.

The Found New City order can also be used to increase the size of an existing city. Move a Settlers unit into an existing city and press the Found New City key. The Settlers unit is absorbed into the city, adding one point to its population. This may be useful when one city is limited in its ability to expand. This city can be used to produce Settlers who migrate to a larger more useful city where they can be put to work. However, Settlers may not be added to cities that already contain ten population points or more.

Settler Engineers: Settlers can make a number of agricultural and industrial improvements for your civilization, acting as engineers. Place the Settlers unit in the square where the work is to be done and press the correct letter key for the IBM/DOS and Windows versions (or CMD + the letter key for the Macintosh) as shown in the accompanying chart. The Pollution key is the K key for Windows and Macintosh versions. Note that your civilization must possess certain technologies before some improvements can be built.

Settler Engineer Capabilities

Key	Improvement
I	Agricultural: irrigate Plains, Grasslands, Desert, Hills, or Rivers
I	Agricultural: clear Forests into Plains; Jungle or Swamp into Grassland
F	Build Fortress: any land square (must possess Construction technology)
M	Industrial: excavate mines in Mountains, Hills, or Deserts
M	Industrial: restore Forest in Plains, Grasslands, Swamps, or Jungle
P(K)	Pollution: cleanup pollution on any polluted land square
R	Build Road: any land square
R	Build Railroad: any Road square (must possess Railroad technology)

Diplomats

Diplomats are unique units that can be very useful to your civilization. They may act as trade missions, ambassadors, envoys, secret agents, and saboteurs. They can open contacts with other civilizations and establish embassies to gather information about your rivals. They can act as spies, stealing information and otherwise disrupting your rivals. They can bribe enemy armies. When your civilization obtains the technology of Writing, you can build Diplomats.

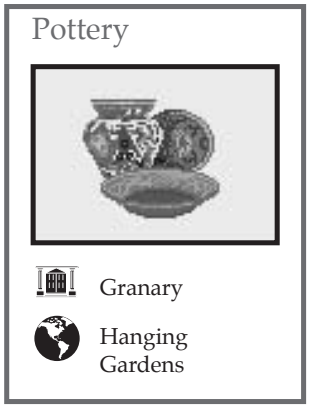
Be aware that enemy Diplomats can be used against your civilization.

Diplomat Movement: Diplomats may move past enemy armies without stopping. However, if an enemy unit attacks a Diplomat, it is almost always destroyed. Diplomats travel overseas in ships as other ground units do.

Diplomats (and Caravans) are the only units that can enter defended enemy cities. When a Diplomat enters an enemy city a menu appears listing tasks that can be performed. The following table shows what Diplomats can do. Note that some Diplomat tasks require that coins be spent and in many cases the Diplomat is destroyed in carrying out the task.

Task	Cost	Effect on Diplomat
Investigate City	No	Destroyed
Establish Embassy	No	Destroyed
Steal Technology	No	Destroyed if successful
Industrial Sabotage	No	Destroyed
Incite a Revolt	Yes	Destroyed if successful
Meet with Ruler	No	Survives
Bribe Enemy Unit	Yes	Survives

Investigate City: This opens the enemy's city display. You can examine what armies are defending it and what improvements have been made. When you exit the city screen, you return to the map display but your Diplomat has been eliminated.



Establish Embassy: The Diplomat establishes official contact with the other civilization and continually reports thereafter its type of government, treasury, number of armies, the name of its capital city, treaties with other civilizations, states of war, and technology advances. This information can be obtained from your Intelligence Advisor through the Advisors menu. Lists by historians of outstanding civilizations only include those with whom you have established embassies. It is only necessary to establish an embassy once with any civilization.

Steal Technology: Your Diplomat steals one technology advance from the other civilization. This can only be done once per city and your Diplomat disappears in the process (his cover is blown). If you have already stolen technology from this city or if the enemy civilization has no technology to steal, the Diplomat loses its turn but is not destroyed.

Industrial Sabotage: Your Diplomat destroys either the item currently under production by the city or one of the city's improvements. You cannot control what is destroyed. The Diplomat is lost in the effort. Destroying a critical improvement may throw the city into unrest (Temple, Cathedral), weaken its defenses (City Walls), or cut its production (Factory). Diplomats never destroy Wonders of the World.

Incite a Revolt: Your Diplomat contacts dissidents within a city and for a suitable payment the city revolts and joins your civilization. The payment to revolt depends on the size of the city and its proximity to the enemy civilization's capital. Enemy capitals do not revolt. Also, a city in civil disorder revolts for less. Your Diplomat is lost in a successful revolt but escapes outside the city if you refuse to pay the cost. The revolt also fails and your Diplomat survives if you don't have enough cash. All units that make this city their home also revolt and join you as well. All existing city improvements except Temples and Cathedrals remain intact.

Meet with Ruler: Your Diplomat opens negotiations with the enemy ruler. This may lead to offers for trading technology or for making treaties. Your Diplomat survives this encounter.

Bribe Enemy Unit: You may convince an enemy unit to defect and join your civilization by moving a Diplomat into its square. A dialog box appears showing how many coins the unit demands to defect. The farther the unit is from its capital, the lower the bribe required. If you accept, the coins are deducted from your treasury and the army switches over. The Diplomat survives regardless of success. When more than one enemy unit is in a square, bribery is not possible. Diplomats may bribe ships and air units so long as they are not stacked with other units. Bribery is considered an act of war and cannot be done to units of civilizations with whom you are at peace without breaking the treaty.

The nearest friendly city becomes the home city for a newly bribed unit (see Home City Roster).

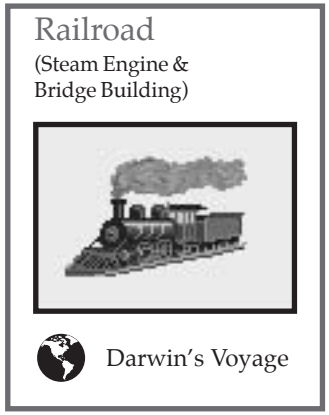
Caravans

Caravans are shipments of trade goods and materials. Over time they represent camel caravans, wagon trains, truck convoys, and cargo containers. They may be used to establish trade routes between cities or to transfer resources for the construction of Wonders Of The World. They become available once you have achieved the technology of Trade.

Trade Routes: A Caravan that enters any city of another civilization or a friendly city ten or more squares away from its home city may establish a trade route. This results in an immediate cash payment for delivery plus an increase in the trade generated each turn. This increased trade means more luxuries, taxes, and science for the home city each turn thereafter.

Each city may have up to three functioning trade routes. If more than three are established only the best three function.

The amount of trade generated depends partly on the size of the two cities. Bigger cities generate more trade. Trade with a city from another civilization is greater than trade with friendly cities. The farther apart the two cities are, the greater the value of trade. Trade is also increased when the cities are on different continents.



Caravans can move into any city they can reach. When at war it may be difficult to smuggle goods into an enemy city without being destroyed. Caravans may be transported overseas in ships as other ground units are, but cannot be landed into a city directly from a ship.

Building Wonders: A Caravan may contribute its construction cost in resources to the cost of building any Wonder of the World by moving into the city where the Wonder is being built. When the Caravan enters, a dialog box offers the choice of contributing to the construction or not. If you decide to help build the Wonder, the Caravan disappears and the resources used to build it are added to the production of the Wonder, speeding its completion.

Military Units

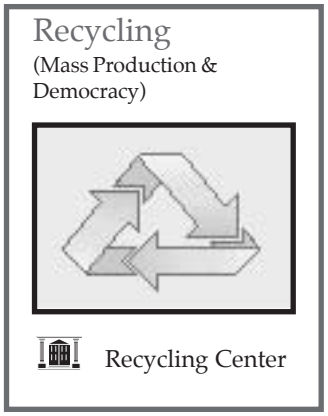
The following are the military units that can be built by your civilization. There is a brief description of each unit, including any special abilities. The three numbers shown after the unit's name are its attack, defense, and movement factors. In parentheses after the name is shown the advance required before each unit can be built. The number of resources it takes to build each unit is shown in brackets.

Armor 10-5-3 (the Automobile) [80]: a group of tanks, or other armored fighting vehicles. Due to its high attack factor and speed, Armor is one of the best units for conducting ground campaigns.

Artillery 12-2-2 (Robotics) [60]: a group of self-propelled, heavy caliber artillery pieces. Defenders are not tripled behind City Walls when attacked by Artillery because the guns fire over the walls.

Battleship 18-12-4 (Steel) [160]: a heavily armed and armored warship. Battleships have a visibility range of two sea squares and may conduct shore bombardments. They may not carry ground units.

Bomber 12-1-8 (16) (Advanced Flight) [120]: a group of long-range aircraft designed to carry and drop bombs. Bombers may stay airborne for one turn but must return to a base (a friendly city or Carrier) by the end of the second turn. They have a visibility of two squares over any terrain. Bombers ignore City Walls in the same manner as Artillery. They may only be attacked by Fighters. Other units may not enter a square occupied by a Bomber, so they are useful for interdicting enemy movement.



Cannon 8-1-1 (Metallurgy) [40]: a group of carriage-mounted, smoothbore cannons. Cannons are excellent units on the attack and their arrival often opens a new round of offensive wars, especially when accompanied by Riflemen who can stack with them for defense.

Carrier 1-12-5 (Advanced Flight) [160]: an aircraft carrier is capable of acting as a base for Bombers, Fighters, and Nuclear units. Carriers may carry up to eight air units and have a visibility of two sea squares.

Catapult 6-1-1 (Mathematics) [40]: a group of siege weapons designed to throw rocks and other materials with great force. Catapults are useful in the defense and attack of cities, but are weak when alone and under attack.

Cavalry 2-1-2 (Horseback Riding) [20]: a unit of mounted soldiers. Cavalry are useful as scouts and raiders because of their speed.

Chariot 4-1-2 (the Wheel) [40]: a group of light carriages, normally mounted on two wheels and each carrying a driver and warrior. Chariots are a powerful weapon on the attack but very weak on defense. They are also useful as scouts because of their speed.

Cruiser 6-6-6 (Combustion) [80]: a very fast and moderately powerful warship. Cruisers have a visibility of two sea squares and may conduct shore bombardment. They may not carry ground units.

Fighter 4-2-10 (Flight) [60]: a squadron of fighter aircraft. Fighters are useful for scouting and for attacking weaker enemy units. They are the only unit that can attack Bombers. Fighters must return to a friendly base by the end of each turn.

Frigate 2-2-3 (Magnetism) [40]: a fast sailing warship armed with a substantial number of guns. Frigates may carry up to four ground units (see Naval Transport.)

Ironclad 4-4-4 (Steam Engine) [60]: a fast, steam-powered warship armored with iron plating. Ironclads may not carry other units. Ironclads are most useful for attacking enemy ships and less so for conducting shore bombardments.

Knights 4-2-2 (Chivalry) [40]: a group of armored warriors mounted on large powerful horses. Knights are a useful combination of speed, defensive strength, and offensive strength.

Legion 3-1-1 (Iron Working) [20]: a well-trained force of infantry armed with shields, short swords, and throwing spears. Legions are good offensive units and relatively inexpensive.

Mechanized Infantry 6-6-3 (Labor Union) [50]: a group of modern infantry mounted on armored personnel carriers like the Bradley. Mechanized infantry is the best defensive ground unit in the game, useful for defending cities or other important points. It also has a good attack factor and excellent speed.

Militia 1-1-1 (-) [10]: a band of citizens armed with crude weapons, mostly tools and farm implements. Militia are probably the only military unit that you can build when starting a new civilization, and are normally only a stopgap until better units become available.

Musketeers 2-3-1 (Gunpowder) [30]: a company of infantry armed with muskets. Due to their higher defense factor, Musketeers are useful for replacing Phalanxes in positions that need to be defended.

Nuclear 99-0-16 (Rocketry) [160]: a missile weapon armed with a nuclear warhead. A Nuclear unit can only be built after the Manhattan Project Wonder has been built somewhere in the world. A Nuclear unit may move between cities and Aircraft Carriers. It is destroyed if it does not end its turn in one or the other and does not attack. It explodes when it attacks an enemy unit or city. A Nuclear attack destroys all military units in the target square and adjacent squares, regardless of who they belong to. Nuclear attacks also reduce city populations and cause pollution (see Nuclear Weapons).

Phalanx 1-2-1 (Bronze Working) [20]: a company of infantry armed with long pikes and very strong on the defensive. Phalanxes are very good for defending cities and other important points early in a civilization's history. No other type of unit is as cost effective for defense until Musketeers become available.

Riflemen 3-5-1 (Conscription) [30]: a company of infantry armed with rifles. Riflemen are excellent defenders of cities and other points, and useful for replacing Phalanxes and Musketeers.

Sail 1-1-3 (Navigation) [40]: a small ship powered by sails and lightly armed. Sailing ships may carry up to three other units by naval transport. They are very useful for exploring the oceans because they are not restricted to staying near the coasts.

Submarine 8-2-3 (Mass Production) [50]: a warship designed to attack from underwater by firing torpedos at enemy ships on the surface. Submarines have a visibility of two sea squares and can only be spotted by enemy ships and air units when adjacent. They may not carry ground units or conduct shore bombardment.

Transport 0-3-4 (Industrialization) [50]: a large, modern transport ship. Transports may carry up to eight other units and are very useful for carrying a large force to conduct an invasion.

Trireme 1-0-3 (Map Making) [40]: a small ocean-going ship powered by oars. Triremes are lost at sea approximately half of the time when they are not adjacent to land at the end of a turn. The Trireme is the first ship that becomes available, and it is very useful for early seacoast exploring and transporting Diplomats, Caravans, and other units to nearby islands and continents.

Barbarians

Barbarians are small tribes of raiders that are not part of any opposing civilization. They are always red units. You may encounter them periodically as your civilization begins to expand and grow. They may invade from the sea or arise suddenly in unsettled parts of any continent. Barbarians may attempt to capture or destroy your cities, and pillage your fields and mines.

Because barbarians may appear along any coast or in any unsettled area, it is important to defend cities. It may also be useful to screen your cities from unsettled areas so that any barbarians that appear may be intercepted before they reach your cities.

Most barbarian tribes are accompanied by a leader who may be ransomed if captured. Barbarian leaders look like Diplomats.

Sea Raiders: Barbarians that invade from the sea are looking for a place to settle. They search for cities and attempt to capture them. They do not pillage mines and irrigation because of their interest in making a permanent settlement. If they capture a city, they take it over and begin producing more units to make new assaults. Sea raiders can be fought on land or engaged at sea in their ships.

Land Barbarians: These raiders are interested only in loot, not permanent settlements. This makes them very harmful as they pillage any mines or irrigation they encounter. If they capture one of your cities, they utterly destroy it. For these reasons, land barbarians are best engaged as far from your cities as possible.

Land barbarians arise in areas that are not within the radius of a city. As time passes they appear at even farther distances from civilization. Thus, expanding your cities over a continent eventually removes the threat of barbarians appearing because the entire area has become more or less civilized by the presence of your cities.

Ransoming Barbarian Leaders: If a barbarian leader is alone in a square and you attack him and win, he is captured and immediately ransomed for 100 coins. When barbarian units are attacked and destroyed, leader units stacked with them are also destroyed. Barbarian leaders who have lost their armies attempt to escape and disappear if not captured in a few turns.

GOVERNMENTS

To assist in the management of your civilization there is a system of government. There are six types of government possible but the ones available to you at any moment depend on the technology that your civilization has achieved. One type of government, Anarchy, occurs only under a special circumstance.

At the beginning of a new game your civilization is governed automatically by Despotism. The additional types become available when the specific civilization advance bearing their name is made. (Exception, see the Wonders of the World, the Pyramids).

Each type of government has its own unique features. Some allow greater personal and economic freedom resulting in fast growing trade, science, and economies, while others are better suited to building and employing large armies.

Governments are changed by revolutions.

The 6 governments available for a civilization are:

Despotism
Anarchy
Monarchy
Communism
Republic
Democracy

Despotism: You rule by absolute power. The people just have to live with it because your will is enforced by the army. Due to the minimal amount of economic and personal freedom, production is at a minimum. But total control makes conducting war relatively easy.

Military units do not require resource support until the number of units making a city their home (shown in the home city roster) exceeds the number of people in the city. Each home military unit in excess of the number of people in the city requires one unit of resources for industrial support. Diplomats and Caravans do not require support.

In addition, any map square that produces three or more units of food, resources, or trade has this production reduced by one. For example, a mine that produces three resources normally, produces only two under Despotism.

Settlers require one food unit for support.

Anarchy: You have temporarily lost control of government. Cities continue to operate on their own, but some important operations of your civilization come to a halt until control is restored. You are able to continue controlling the movements of your units.

Anarchy has the same effect as Despotism with several exceptions- no tax revenue is collected, no maintenance is charged for city improvements, and no scientific research is done while Anarchy continues. Anarchy occurs only during revolutions.

Monarchy: Your rule is less absolute, and more with the acceptance of the people, especially an aristocracy of upper class citizens. The aristocratic classes at least have a certain amount of economic freedom, and this results in the potential for greater production of resources, food, and trade. However, the upper classes deduct a share of your civilization's production as maintenance for military units and luxuries in the larger cities.

Under a Monarchy, there is no reduction of production in squares producing three or more units of food, resources, or trade. Irrigation of Grasslands and Rivers, plus mining of Hills pays off now with increased production. All military units must be supported by one unit of resources. Settlers require two food units for support.

Communism: You are the head of the communistic government, and you rule with the support of the controlling party. Although this form of government allows more production than Despotism, the orthodoxy of the party restricts personal and economic freedom, limiting trade. On the plus side, corruption is kept to a minimum by the action of the local party apparatus.

Communism has the same effect as Monarchy except that corruption is flat. Instead of increasing the farther a city is located from the Palace, all of your cities suffer the same rate of corruption. (See Corruption).

Republic: You rule over the assembly of city-states formed from the cities that your civilization controls. Each city is an autonomous state, yet also is part of the republic which you rule. The people feel that you rule at their request. They enjoy substantial personal and economic freedom, and this results in greatly increased trade. A Senate reviews your diplomacy, and can override your decisions.

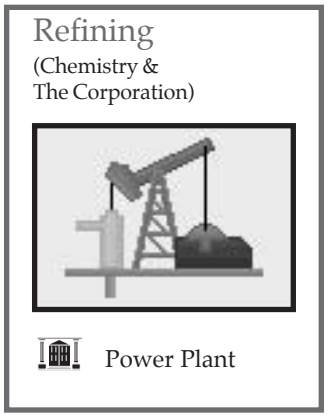
Grasslands, Rivers, and Hills are as productive as they are under a Monarchy. Also, an additional trade unit is generated wherever at least one trade unit already exists. Military units each require one resource for industrial support. Settlers require two food units. Ground and ship units not in their home city (except Transports, Diplomats, and Caravans), or air and Nuclear units regardless of location, make one citizen (one city population point) unhappy.

In addition, the Senate of your government accepts any peace offer made by another civilization, overriding even a desire for war by you.

Democracy: You rule as the elected executive of a democracy. The people feel that you rule because they want you to. The degree of freedom allowed under this government results in maximum opportunity for economic production and trade. However, the people also have a very strong voice in determining how much economic production is devoted to improving the standard of living. As in a republic, some diplomatic decisions are subject to review by your Senate.

Democracy is very similar to the Republic. One difference is that under Democracy there is no corruption. Also, if one or more of your cities is in civil disorder for more than two turns, there is a chance each turn thereafter that a revolution may occur. Ground and ship units not in their home city (except Transports, Diplomats, and Caravans), or air and Nuclear units regardless of location, make two citizens unhappy.

Revolution



Governments are changed through a process of revolution. This occurs normally at your command because you wish to change to a type of government more suitable to your plans. You may change your civilization's government type to any for which you have made the correct advance.

To cause a revolution, choose the option "Revolution" from the Game menu for the IBM/DOS version or from the File menu for the Windows and Macintosh versions. After a few turns of Anarchy, a menu appears that lists the government options available to your civilization. The new government goes into effect immediately after you make your choice.

If your civilization possesses the Pyramids, a Wonder of the World, you may change to any government, regardless of what advances you have made, and without passing through Anarchy. This ability is lost after the Pyramids become obsolete.

ADVISORS/WORLD REPORTS

You have a staff of advisors available always who can provide detailed information concerning the affairs of your civilization. By consulting with these advisors you can make informed decisions about the management of your cities and relations with other civilizations. The reports of these advisors can be obtained from the Advisors menu found on the menu bar at the map display.

In addition, there are a number of other reports that can be consulted. These are available from the World menu on the menu bar.

The following advisors and world reports can be consulted:

Advisors:

- City Status
- Military Advisor
- Intelligence Advisor
- Attitude Advisor
- Trade Advisor
- Science Advisor

World Reports:

- Wonders of the World
- Top 5 Cities
- Civilization Score
- World Map
- Demographics
- Spaceships

City Status: This report lists your cities and shows what they are producing. For each city you can read the population size, the amount of food, resources, and trade generated, what item is being produced now, and how near it is to being completed. Cities are listed from top to bottom in order of when they were founded or added to your civilization.

It is useful to consult this advisor at the beginning of your turn to refresh your memory about what you are producing and how close it is to completion. You can see at a glance whether a critical military unit or Wonder of the World is nearly completed.

Military Advisor: The first military report shows how many units of each type your civilization has in existence currently and is producing.

Click on the screen to open the second page of the report. This page shows the losses you have inflicted in combat with other civilizations. The losses are shown by type of unit and civilization. Civilizations are differentiated by their color. For example, if one of your rivals is the Aztecs, colored yellow, and there is a yellow "1" in the Ironclad row, this indicates you have destroyed one Aztec Ironclad.

Intelligence Advisor: This report is a summary of information gathered by your embassies. For each civilization with whom you have established diplomatic relations, this report presents accurate data on the name of its capital, type of government, size of treasury, size of military, and diplomatic status with other civilizations. No information appears for civilizations with whom you have not established an embassy. (See Diplomats for a discussion of embassies.)

You can learn here which civilizations are at war and which are at peace, and with whom. You may find it useful to consult this report before attacking another civilization. For example, if two of your neighbors are at war, you may consider passing the opportunity to attack one of them yourself. If you do attack, they may make peace with each other and both attack you. By leaving them at war, you are free to concentrate on your own progress while they wear each other down.

A second page of information may be called up by clicking on the Info button. This page reports some additional information regarding the apparent goals of the civilization's leader and the technological advances they have made most recently.

Attitude Advisor: This advisor reports the relative happiness of your citizens. From his survey you can see at a glance the number of happy, content, and unhappy citizens in each of your cities. This information can be very useful after changing your tax rates or type of government, because those changes can have a significant effect on the happiness of your citizens. By reviewing this survey you can see quickly where you may have to make adjustments in city management to avoid disorder.

For each of your cities, you see the current population and icons of any city improvements which help increase the happiness of the people. At the bottom of the page is a total for the size of your civilization's population and the percentages of the total that are happy, content, and unhappy.

By examining the roster of improvements for each city, you may see where a city is missing a helpful improvement.

Trade Advisor: Your trade advisor reports for each of your cities how much of its trade is directed toward bringing in luxuries, tax revenue, and new ideas (scientific research). The amount of luxuries, taxes, and science a city is producing is shown to the right of its name. Below the list of cities is a total for tax collections per turn.

On the right side of the report is a list of improvements existing in your cities. Only those improvements that cost money for maintenance are listed. The report shows how many of each improvement exist and the cost of maintaining them. At the bottom of this list is the total of your improvement maintenance costs for this turn.

By comparing the tax revenue number with the maintenance cost total, you can see whether the treasury of your civilization is increasing each turn, shrinking, or remaining the same. If your treasury is shrinking, this may be a good time to increase taxes or adjust individual cities to produce higher revenue. In an emergency, you may wish to sell an improvement to raise cash.

The final item in the report is labeled "Discoveries" and shows the number of turns needed for your scientists to acquire the technology advance that you have directed them to seek. The more scientific research done by your cities, the fewer turns required. Note that as technology increases, it takes more and more research to make the next breakthrough.

Science Advisor: Your science advisor keeps a record of the technologies your civilization has already achieved and the progress of your scientists toward their next advance. Technology that your civilization was first to learn is written in white letters. A chart shows progress toward the next advance. The light bulbs indicate how much research has been done. When the box is full of light bulbs, the advance being researched is achieved.

It is possible to continue making advances beyond the basic list that defines civilization up to the end of the 20th Century. These continuing advances are called Futuristic Advances and each one you acquire adds 5 points to your civilization score.

Wonders of the World: Your geographers maintain a listing of the location of the Wonders of the World. When they hear of the construction of a new one they add it to the list. By the end of your civilization's history there may be as many as 21 Wonders: 7 ancient, 7 medieval, and 7 modern. Knowing where they are may be useful because capturing the city where a Wonder is located adds to the glory of your civilization.

The geographer's list shows the Wonder's icon, its name, the city in which it is located, and the civilization that built it. Click on the page of ancient Wonders to clear it and open the page of medieval Wonders, and clear again to see the modern Wonders. Note that only existing Wonders appear on the list. Those that have not been built or have been destroyed are not listed. For more information about the Wonders, see Wonders of the World.

Top Five Cities: This report shows graphically the five highest rated cities in the world. The five cities are named and their parent civilizations are also listed. Below the names are the population rosters of the cities and the icons of any Wonders that have been built there. All cities in the world are rated and the five with the highest scores are put on the list. Cities score points as follows:

2 points: For each happy citizen

1 point: For each content citizen

10 points: For each Wonder of the World built there

Note that cities you have never discovered can be revealed to you in this list. The magnificence of these cities has passed by word of mouth to the corners of the world. Your geographers and other advisors sift the rumors of travelers and traders constantly for information regarding other civilizations. Even though some civilizations are not known to you, the splendor of their cities has reached the ears of your advisors.

Civilization Score: This is a relative measure of how your civilization is doing. It is also totaled one last time when the game ends to give you a final score for your civilization. You can check with your advisor throughout the game to see how you stand. Your ultimate but difficult goal is to score 1,000 points or more.

Points are scored for the following conditions.

2 points: For each happy citizen

1 point: For each content citizen

20 points: For each Wonder of the World that you possess

3 points: For each turn of world peace (no wars)

5 points: For each futuristic advance

-10 points: For each map square currently polluted

At the bottom of the report is a bar graph indicating how far you have progressed towards a civilization score of 1,000.

World Map: Also the work of your geography department, this is a map of the entire known world. Parts of the world you have not discovered are covered and cannot be seen. In addition, this map is centered on the part of the world that was visible in the map display. Thus you cannot tell where you are located relative to the north and south polar boundaries until you discover them.

Spaceships: When you contact your space advisors, they can report the progress of any spaceship under construction. Select from the menu the civilization whose spaceship you wish to examine. Your advisors present a picture of the construction accomplished to date and their assessment of what it can carry, its estimated flight time, and its success probability.

The space race begins once the Apollo Program Wonder of the World has been constructed. Thereafter any civilization that has the required technologies may begin building parts of a space ship.

Once the space race begins, it is important to maintain a watch on the spaceships of your rivals. You need to assess when they are likely to launch so you can plan the size of your own ship and its launch date. If you conclude that your ship construction is too far behind to catch up, it may be necessary to mount a military campaign to capture the enemy capital. Capturing the enemy capital destroys a space ship under construction or one already launched.

Demographics: Your advisors keep track of demographic information regarding your civilization in comparison to the others in the world. This information is available in the Demographics report. It details your civilization's status in a

number of areas and where it ranks in the world. Examining this report may offer clues about which civilizations are your biggest threats.

The following table shows the statistics found in the report.

Demographics Report

Approval Rating:	the percentage of the people who think you are doing a good job as ruler.
Population:	the number of people in your civilization.
GNP:	the total of luxuries and taxes generated by your cities.
Manufactured Goods:	the total of resources generated by your cities.
Land Area:	the land squares that your units were last to pass through, representing the part of the world that is under your influence and control.
Literacy:	the percentage of your population that can read. This depends on acquiring the advances of the Alphabet, Writing, and Literacy, plus the number of Libraries and Universities that your civilization possesses.
Disease:	a relative standing based on whether your civilization has acquired the advance of Medicine, and the number of Granaries and Aqueducts in your cities.
Pollution:	a comparison of the amount of pollution you are creating versus your rivals, measured by the number of smokestacks generated by your cities.
Life Expectancy:	a relative number determined by the extent of disease and pollution in your civilization.
Family Size:	a number determined from the amount of excess food generated by your cities. Large family size means rapid population growth.
Military Service:	an indicator of the length of military service determined by comparing the number of military units you possess to the size of your population.
Annual Income:	the amount of luxuries and tax revenues your cities generate, divided by your population.
Productivity:	the total of food, resources, and trade generated by your cities, divided by your population.

CIVILOPEDIA

The Civilopedia is an on-line encyclopedia of Civilization. It includes reference information on over 150 items of significance in the game. For most items there is a two page entry. The first page is a description of the item and its historical importance, the second page explains the significance of the item in the game.

The Civilopedia can quickly be consulted from the map display. Pull down the Civilopedia menu and choose one of the following parts that you wish to consult.

Complete: all listings (takes several pages).

Civilization Advances: the 70+ technologies; these are also shown in alphabetical order in sidebars on manual pages.

City Improvements: the structures you can build in a city to improve its working, including the Wonders of the World.

Military Units: the units that can be built, including Diplomats and Caravans.

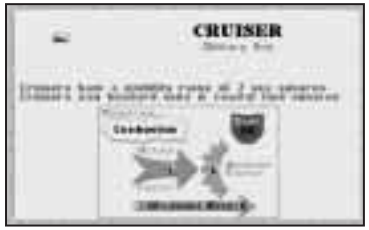
Terrain Types: descriptions of the terrain in the various map squares.

Miscellaneous: government types, terrain improvements, and other game concepts not covered elsewhere.

After you have selected a section of the Civilopedia, a list of the entries found there opens. Choose the item you wish to learn about by clicking on its name or selecting it and pressing the Enter key. This opens a page of the Civilopedia. After reading this page, clear it by clicking on it to open the second page if one exists.

When you have finished consulting the Civilopedia, close it by pressing the Exit button in the top right corner.

Sample Civilopedia Entry



The Civilopedia description of each technology advance is automatically displayed when that advance is acquired as you play. Normally, both pages of the entry are displayed, one after the other. If you wish, you may have the first page turned off so that only the second page appears. Toggle off the Civilopedia text from the Options submenu. This is found in the Game menu for the IBM/DOS version or in the File menu for the Windows and Macintosh versions.

PLANETARY CARETAKING

One cost of heedless industrial growth is a gradual polluting and poisoning of the environment. Of the many dangers posed by pollution, the greatest may be global warming. An unchecked rise in the planet's atmospheric temperature threatens catastrophic geographic changes including melting polar ice caps, rising sea levels, and parched farmlands. As you steer your civilization into the industrial age, manage your cities to minimize pollution and prevent global warming.

Different kinds of poisoning may occur when nuclear weapons are used or a nuclear reactor melts down.

Industrial Pollution

Every game turn there is a probability of pollution occurring within the economic radius of each of your cities. The probability of pollution occurring depends on two factors: resources and population. The most important factor is the number of resources the city generates. The more that are generated, the higher the probability of pollution. Below a certain level, there is no chance of pollution.

The city's population has no effect on pollution until you acquire the advance of the Automobile. Thereafter the population may become a significant factor in the probability of pollution occurring.

When there is a probability of pollution occurring in a city, smokestacks begin appearing on the city display in the information window. The number of stacks indicates the probability each turn of a city map square becoming polluted. For example, a city generating a large number of resources each turn (say 20) and inhabited by a large population may show five smokestacks in its city display. This indicates that the probability of a new square becoming polluted is 5% this turn.

The presence of a Nuclear Power Plant, Hydro Power Plant, or Recycling Center improvement in a city reduces the chance of pollution. The Hoover Dam, a modern Wonder of the World, acts as a Hydro Power Plant for all friendly cities on its continent. The multiplier effect of the Automobile is negated in any city that builds the Mass Transit improvement.

Cleanup

Pollution can be cleaned up by Settlers units. Move the Settlers onto the polluted square and press the Clear Pollution key (the P key for the IBM/DOS version, the K key for the Windows version, and the CMD + K keys for the Macintosh version). The Settlers unit is marked with a "P" to note it has been ordered to clean up pollution.

After four turns of work, the pollution disappears. Adding more Settlers units to a polluted square does not speed the cleanup.

Effects

Your environmental advisors inform you immediately when any map square becomes polluted. Black smudges appear on the polluted square. Pollution is easier to spot if units are toggled off on the map. Press the Toggle Units key to clear the map of units (the T key for the IBM versions and the CMD + X keys for the Macintosh) and then press the key again to restore them.

Pollution reduces the production of food, resources, and trade in any map square where it appears. Pre-pollution production is halved and then rounded up. For example, a square that produced 4 food, 1 industry, and 2 trade units before pollution produces only 2 food, 1 industry, and 1 trade unit after. When cleaned up, the map square returns to pre-pollution levels of production.

Monitoring Pollution

The extent of pollution throughout your civilization can be monitored by watching the pollution indicator, a small sun in the date window of the IBM/DOS map display or the status window of the Windows and Macintosh versions. The color of the sun indicates the extent of the risk of global warming. The colors range from dark red, to light red, to yellow, to white. Light red indicates a low risk and white indicates a very high risk.

The colors of the sun depend on the number of squares currently polluted and a lag of time. The more squares polluted, the higher the risk. The lag reflects the time required for the pollution to take effect.

Global Warming

Effects: Global warming causes geographic changes throughout the world. Deserts, Plains, and Grasslands on coasts may become Swamps, and coastal

Forests may become Jungles. Plains, Grasslands, and Forests in the interior may become Deserts. The result may be much reduced food, resources, and trade for your civilization.

Your environmental advisors report immediately if global warming has occurred. The effect is always bad, but in the case of flooded coastal areas you may improve Jungles and Swamps over time.

Causes: Global warming may occur when at least nine map squares, anywhere in the world, are polluted. If they are left unattended for too long, environmental damage occurs.

Once an environmental disaster has occurred, the cycle starts over again. The planet has achieved equilibrium at the new higher temperatures. If pollution continues or increases once more to high levels, another bout of environmental problems may occur. This cycle may repeat endlessly if pollution is not controlled.

Nuclear Pollution

Pollution may also be caused by nuclear weapons or the meltdown of a nuclear power plant. Pollution caused by either of these events has the same effect as industrial pollution.

Nuclear Weapons: When a nuclear unit is used in an attack, an additional effect of the attack is the pollution of a number of map squares around the impact square. Remember this when you are tempted to use nuclear weapons. You may create pollution you cannot readily reach with Settlers to clean up, raising significantly the risk of global warming.

If a city is the target of a nuclear attack, half of the population is destroyed. In addition, all military units in and adjacent to the target square are destroyed, regardless of the civilization they belong to.

Nuclear Meltdown: If a Nuclear Power Plant melts down, half of the city's population is destroyed and a random number of squares near the city becomes polluted.

There is risk of meltdown when a city that has a Nuclear Power Plant goes into civil disorder. The civilian unrest may result in safety procedures becoming so lax that a catastrophic accident occurs. If you build Nuclear Power Plants in any of your cities, take special care not to allow those cities to go into disorder.

When your civilization achieves the technology of Fusion Power, the risk of meltdown disappears. Your Nuclear Plants convert automatically to the technology of fusion power, which is free of the risk of meltdown.

DIPLOMACY

Diplomacy is conducted by negotiations between yourself and the ruler of a rival civilization. Negotiations may occur when a rival sends an envoy to talk or when you present initiatives for agreement. Diplomacy is conducted face-to-face with one rival ruler at a time and can lead to exchanges of technology, offers of peace, international extortion, or declarations of war.

A rival may contact you when units from each of your civilizations are adjacent to each other. A rival envoy may also arrive at any time. You may start negotiations by sending a Diplomat into a rival city and selecting the option "Meet with Ruler."

The tone and result of any negotiations are greatly influenced by the mood of your rival. The opposing leader may be antagonistic, supplicating, or somewhere in between. This mood depends on the leader's personality and how your two civilizations compare to each other and to the rest of the world. You may be able to pick up cues about a rival's mood from facial expressions or background music.

A rival leader's personality may be aggressive, friendly, or neutral. Aggressive leaders are more likely to lean toward war or demand high payments for peace. Friendly leaders are more likely to offer peace and may only be bluffing when asking for payment. If you have broken previous peace agreements with this civilization, that is remembered and also influences the degree of antagonism.

If you are the largest, most powerful, and richest civilization in the world, all rivals are likely to be very demanding or antagonistic. However, if the opponent is puny in comparison, the natural tendency toward being belligerent may be overridden. A civilization threatened with extinction is more interested in survival.

All negotiations end with either an agreement of peace or a declaration of war. Even the most antagonistic rival may concede peace for a suitable payment of cash or technology. This may purchase peace only temporarily, however.

Establishing embassies with other civilizations can be very useful in preparation for negotiations. Your Intelligence Advisor collects information from all of your embassies and from him you can learn important facts about your opponents, including their size and the personalities of their leaders. This information is not available for civilizations with which you have not established an embassy.

Trading Technology: Civilizations that are not extremely antagonistic may offer to trade technology. They begin by offering one you don't possess. They may actually have several you lack. If you agree, a menu of the technologies they can trade appears. Select the one you want and then they will take one from you. You have no choice regarding what they take and cannot veto the trade. You may continue trading as many technologies as you possess, provided the other party is interested."

Tribute: A rival may demand tribute in the form of a cash payment or a civilization advance during negotiation. If you meet this demand, the rival almost certainly agrees to peace. If you reject the demand, an antagonistic rival generally declares war. The demand of a more peaceful or threatened rival may only be a bluff, and peace may be offered anyway after demands are rejected. In some cases, a rival offers a reward for you to make peace or declare war on another civilization.

Post-Treaty Negotiations: Once you agree to a peace treaty, you have an opportunity for further negotiations. A menu opens offering three choices: a declaration of harmony, a military proposal, or a demand for tribute. The declaration of harmony has no real effect. A military proposal is a suggestion by you for your new friends to attack a third party. This generally inspires a demand for a cash payment which you can pay or turn down. If you turn it down, no war is declared.

The third option is a demand for tribute to cement the new treaty you have signed. If your opponent is weak or in awe of your power, he may pay. Alternatively, he may refuse to pay, or go so far as to declare war on you.

Peace

Peace between your civilization and another can only result from diplomacy. If you and your rival agree, then a state of peace can occur. Choosing peace is voluntary unless your government is a Republic or Democracy. In those cases the Senate of the government overrules any decision for war and always accepts peace. If you don't want peace, refuse to talk to the enemy. This prevents them from making an offer the Senate may force you to accept.

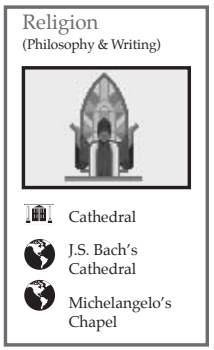
Peace agreements can normally be broken at any time by either party, but so long as it holds, both parties must adhere to the following rules: units of the

other civilization, even Diplomats, may not be attacked or bribed; no units, except Diplomats and Caravans, may enter squares that have been improved by the other party within the radius of a city (irrigated, mined, or penetrated by roads); squares that the other party has under development may not be pillaged; and technology may not be stolen from the other party. Any of these events ends the peace and triggers war. You are warned that you are about to break peace and have a chance to check your action.

If your government is a Republic or Democracy, you may not violate a peace agreement voluntarily. The Senate forbids any action that starts war. If you consider war necessary, you must have a Revolution to overthrow the government and put in one more receptive to your wishes. As an alternative, wait for your opponent to break the peace himself or declare war on you. Another way to break a peace agreement you don't like is to incite a revolt in an enemy city. This can be done regardless of your government.

When you are at peace it is much easier for trade Caravans to reach the cities of the other party and establish trade routes. If the entire world is at peace, your civilization score is increased by 3 points each turn. The major benefit of peace is that you are not at war. During war, all of the proscribed activities are possible, and can cause great damage and waste of resources.

King's Advisors



The advisors that appear behind rival kings are intended to indicate the government of the enemy civilization and its relative size. Four advisors behind the king indicates that this civilization is one of the largest in the world. A king with only one advisor indicates a very small civilization. The dress of the advisors indicates the civilization's type of government as follows. A government in Anarchy is represented by the advisors of Despotism.

Mongols: Ancient Despotism
Egyptians: Ancient Monarchy
Greeks: Ancient Republic/Democracy
Hoodlums: Modern Despotism
English: Modern Monarchy
Soviets: Communism
Americans: Modern Republic/Democracy

THE SPACE RACE

The environmental pressures of growing populations in the modern world are forcing humans to look into space for resources and living room. The question is not whether humans are to travel to the stars, but when. The final act of stewardship you can perform for your civilization is to insure that they lead this exodus.

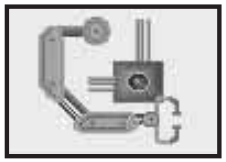
As noted earlier, the history of your civilization ends when either you or one of your rivals reaches a nearby star system with colonists. If your spaceship is the first to arrive, you receive a bonus to your civilization score in recognition of this final accomplishment. Regardless of how many colonists your spaceship is carrying, or how fast it is, if a rival makes planetfall first, you receive no bonus.

The construction of spaceships may not begin until one civilization has built the Program Wonder. Thereafter, the race is on and any civilization that has acquired the necessary technology may begin building the parts of a spaceship.

Each civilization, including yours, may build only one spaceship at a time. Once it is launched, another one cannot be built and sent off. Ships that have been launched may not be recalled or turned around. Spaceships in space or still being constructed are destroyed if the owning civilization's capital is captured. In this case, a new ship may be constructed.

Spaceships

Robotics
(Plastics & Computers)



Artillery Unit

Mfg. Plant

Spaceship Module

The purpose of your spaceship is to carry as many colonists as possible to another star system. To have any chance of success it must provide at least a minimum of the following: living space for colonists, life support, energy sources, propulsion power, and fuel for the engines. The better prepared the spaceship, the higher the number of colonists that arrive safely and the faster the voyage.

Your goal is to build a spaceship that can hold as many colonists as possible, yet travel at a reasonable speed and with a reasonable probability of success. As construction of your ship proceeds, keep an eye on its specifications, displayed to the right of the spaceship display. All spaceships have the same characteristics: population, food, energy, mass, fuel, flight time, and probability of success.

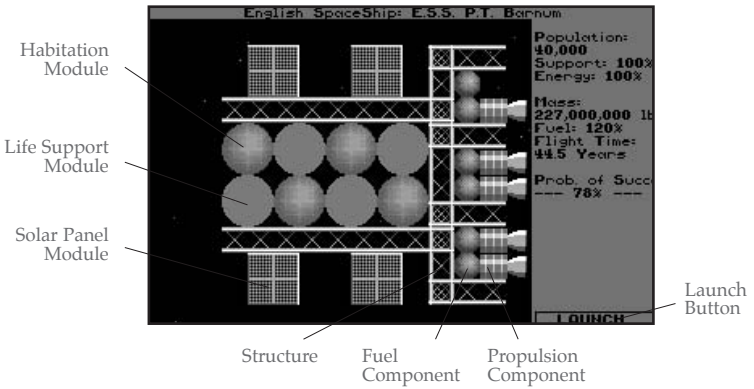
Once you have built a spaceship that meets the minimum requirements for carrying colonists, you may launch or proceed with further construction to increase the capacity of the ship.

Population: The number of people the spaceship is outfitted to carry. The more people it carries to the new planet, the higher your bonus.

Support: The percentage of the people the ship is prepared to carry that can be supported. People that are not provided with life support cannot survive the voyage.

Energy: The percentage of the energy required by the habitation and life support

Spaceship Display



Rocketry
(Advanced Flight & Electronics)

Nuclear Unit

modules that is being provided now. If sufficient energy is not provided for life support and habitation, the probability of success will be very low.

Mass: All of the components, modules, and structures add to the mass of your spaceship. The greater the mass, the more power required from propulsion parts to move it.

Fuel: The percentage of the fuel your propulsion units require that is currently aboard. If insufficient fuel is provided, the propulsion components aboard cannot work to their maximum power and the best possible speed cannot be attained.

Flight Time: A calculation of the number of years required for your spaceship to reach the nearest star based on the ship's mass and engine power. Adding more engines and fuel reduces flight time.

Probability of Success: The approximate percentage of the people that can be carried that are expected to survive the voyage, based on the amount of food and energy provided, plus the flight time. The faster the flight, the higher the expected survival rate.

Space Ship Launch: To send your spaceship on its voyage, press the Launch button found at the bottom right of the spaceship display.

Construction

Your spaceship is constructed of parts. Each part is built like any other improvement, except that when a part is completed, it is automatically added to your ship. The parts of the spaceship come in three types: components, modules, and structures. Each type is available for construction when you have achieved a specific technology advance.

All modules and components must be connected to a sufficient structure. If a module or component is not connected, it is outlined in red to signal that it is not working. Once sufficient structural parts have been added, the outline disappears.

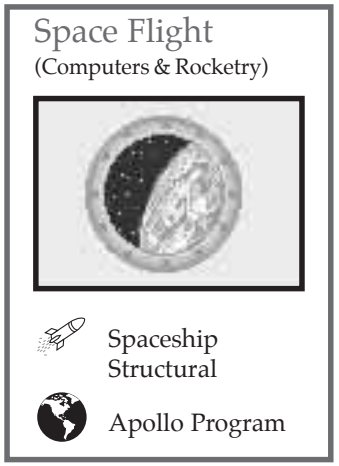
Components

To build spaceship components you must have achieved the technology advance of Plastics. You can then build components at a cost of 160 resources. There are two kinds of components, propulsion and fuel. When a component has been completed, you choose which type has been built.

Propulsion Components: These are the engines that provide the power for space flight. The more engines you add, the faster the ship travels, the sooner it reaches its destination, and the higher the probability of success.

Fuel Components: These provide fuel for the propulsion units. In order for the propulsion units to perform to their maximum, one fuel component must be provided for each propulsion component.

Modules



Spaceship modules require the technology of Robotics and cost 320 resources each to build. They exist in three types: habitation, life support, and solar panels. When a module is completed, you choose which type it is and then add it to your ship.

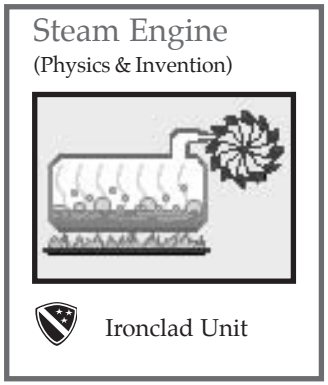
Habitation Module: Each habitation module provides living space, community services, and recreational facilities for 10,000 colonists.

Life Support Module: Each life support module provides the food and other requirements for the 10,000 colonists carried in one habitation module. People carried in a habitation module that doesn't receive life support have a very low probability of surviving.

Solar Panel Module: Each solar panel module provides enough energy to power two of the other types of module. Modules that don't receive power cannot function properly.

Structures

Spaceship structures require the technology of Space Flight and cost 80 resources each to build. You must build sufficient structure parts to connect the components and modules together. Parts that are not connected do not work and provide no benefit to the ship.



ADDITIONAL NOTES

Leader Biographies

The civilizations that oppose you are ruled by well-known figures from history. For example, if you encounter the Greeks, they are ruled by Alexander the Great.

The strengths and weaknesses of the leader are reflected in how that person manages his or her civilization. Alexander, who conquered most of the known world in his time, may be expected to be similarly aggressive if he appears as one of your rivals. Each rival leader in Civilization is rated in three categories: Aggression, Development, and Militarism. Within each category there is a scale of behavior. The leader may be at one end or the other, or neutral.

Aggression: This measures how likely the leader is to go to war with his neighbors. Aggressive leaders are likely to choose war even when involved in several wars already. Friendly leaders are likely to make peace even when not at war elsewhere.

Development: Expansionist leaders are interested in expanding the size of their civilizations and devote resources to building Settlers and sending them out to found new cities. Perfectionist leaders, the other end of the scale, are more interested in building up individual cities and improving the terrain around them. While they do expand, they do so at a much slower rate than their opposites.

Militarism: Militaristic leaders seek to acquire technology that leads to better weapons. Civilized leaders seek technologies that are most useful in improving their civilizations economically and politically.

You can learn about the personality of a leader of any civilization with which you have established an embassy from your Intelligence Advisor. Press the Info button for the civilization and look under the leader's name. Listed there are the personality characteristics of the leader. For any category that is not mentioned, the leader is neutral. For example, Elizabeth I is listed only as Expansionist. That indicates she is neutral regarding Aggression and Militarism. Be aware that these personality traits are only tendencies and that all leaders are capable of any type of action, depending on circumstances.

The leaders and civilizations that you may encounter are listed below. For each there is a brief biographical note and a hint or two on what to expect if you encounter them.

Abraham Lincoln (Americans): From humble beginnings and largely self-taught, Lincoln rose to become one of America's greatest Presidents. Directing the nation through the Civil War, his will, intellect, and political skill were critical for the survival of the fledgling democracy. Most often associated with the emancipation of slaves, the reunification of the country and the preservation of democracy are his lasting contributions.

In Civilization, Abraham Lincoln and the Americans are most likely to become a democracy. While they look to expand, they are not overly aggressive.

Alexander the Great (Greeks): Alexander inherited the throne of Macedonia in 336 BC and quickly gained control of all Greece. At the head of an allied Greek army, he set out on one of the greatest military campaigns of history. Within twelve years he had conquered the enormous Persian empire to the east, Egypt to the south, and the western part of modern India. Only the reluctance of his men to continue ended the conquests. He died prematurely of fever at the age of 33, but in this short span established himself as one of the greatest generals of all time.

If you encounter Alexander and the Greeks, they can be expected to expand aggressively.

Elizabeth I (English): Queen of England for 45 years, she inherited a strife-torn, failing nation and built it into a first-rate European power. Her main adversaries were the Spanish under Philip II, who went into a steady decline after the defeat of their Armada in 1588. Elizabeth was known for important domestic reforms as well as shrewd diplomatic and military maneuvers. Her reign was marked by a general flowering of the English economy and culture. She presided over the beginnings of the British empire, not quite living to see the establishment of English colonies in North America.

Elizabeth is a formidable foe, aggressively expanding and competently growing at home.

Genghis Khan (Mongols): After uniting the Mongol tribes, he conquered the Chin Empire of northern China by 1215. For the next nine years his armies moved westward, overrunning all in their path and reaching well into eastern Europe. The Mongol hordes were armies of mounted bowmen who were outstanding riders and marksmen. Their recurved bow design was technologically ahead of Western weapons, being both compact and powerful. From his capital at

Karakorum, south of Lake Baikal, the Great Khan presided over one of the largest land empires of history.

In Civilization, the Mongols can be expected to expand very aggressively at the expense of the development of individual cities.

Hammurabi (Babylonians): King of Babylonia, he is most noted for his code of laws, one of the earliest known. His empire encompassed the eastern part of the Fertile Crescent, centered on the Tigris and Euphrates Rivers. A competent ruler and builder of civilization, his empire was eventually destroyed by raids from Asia Minor.

The Babylonians are generally more concerned with building and growing, rather than continual expansion.

Julius Caesar (Romans): One of the more controversial characters of history, Caesar was both a staunch defender of the people's rights and an ambitious politician who destroyed the Roman Republic. Certainly brilliant, among his other skills he was a superb general, conquering Gaul in a classic campaign that is still studied, invading Britain, and establishing himself as dictator for life after defeating Pompey in a civil war. Stabbed to death on the Ides of March (3/15) by friends and proteges who resented his grab for power, he nevertheless made the future Roman Empire possible.

The Romans are tough foes and can be expected to balance expansion, conquest, and development.

Mahatma Gandhi (Indians): The father of Indian independence, he was a skilled politician and spiritual leader. His campaign of passive resistance wore down the British and after World War II he was an important part of the independence negotiations. He worked tirelessly for an end to the caste system in India and for peaceful co-existence between the two great religious groups of the nation, the Hindus and the Muslims. He was fatally shot by a Hindu fanatic while on a prayer vigil for peace.

The Indians under Gandhi are not aggressively expansive and are more likely to develop the areas they can obtain peaceably. However, they are conscious of technology and can be a strong rival in a space race.

Mao Tse-tung (Chinese): Considered the founder of the People's Republic of China, he rose to power in the 1930s, leading the Long March and becoming

head of the Chinese Communist party that eventually defeated the Nationalists. He led the new nation until 1958 when he was replaced due to the failure of many programs, including the Great Leap Forward, a plan to kick-start local industrial growth. He regained power after the disruption of the Cultural Revolution, a four-year period of unrest that he directed.

The Chinese are generally concerned with building a strong civilization and don't seek to expand aggressively.

Montezuma (Aztecs): The Aztec emperor at the time of the Spanish conquest, he was a brutal despot and angered his subject peoples. Cortez took advantage of this unpopularity, enlisting the aid of 30,000 Indian allies for the march on the Aztec capital. Montezuma's belief that the Spanish were the descendants of gods kept him from recognizing the danger and adequately preparing his formidable army.

The Aztecs are fierce warriors and dangerous opponents. They are quite capable of competent military campaigns while simultaneously building a strong empire.

Napoleon (French): Through bold and decisive action, Napoleon rose quickly during the turmoil of the French Revolution. He became part of the ruling Consulate that resulted from a Paris coup and thereafter consolidated power, eventually having himself crowned emperor in 1804. For the next 11 years Europe suffered almost constant war. At its peak the French Empire stretched from Madrid to Moscow. An allied coalition completed the defeat of the French at Waterloo and forced Napoleon into a final exile.

The French are conquerors and seek to expand. Perhaps not as dangerous as the Aztecs or Greeks, they are still a threat that must be watched.

Ramesses (Egyptians): Ramesses II ruled Egypt for 33 years after usurping the throne from his brother. Under his rule the empire blossomed, reaching from Syria to the fourth cataract of the Nile. He is noted for the splendor of the monuments, temples, and other buildings he distributed liberally throughout the country. However, the rise of luxury, slavery, and mercenary armies during his reign fostered the indolence that led to the eventual decline of the Egyptian empire.

The Egyptians are great builders. Under Ramesses they can be expected to construct mighty cities and can be a significant threat if allowed to expand over a large area.

Shaka (Zulus): The first king of the Zulus, Shaka united the tribal villages under his rule and forged the Zulu army. In a short period he conquered all nearby enemies and established Zululand. He and his descendants ruled uncontested until Europeans arrived on the border. Though the Zulus were without peer as individual warriors, they proved no match for well-led European armies with superior weapons.

The Zulus are fierce warriors and are not afraid to pick a fight. Be wary if you discover them next door. They are not fascinated by technology and you may be able to gain a technological advantage over them.

Stalin (Russians): A long-time Bolshevik, he emerged from the power struggle following Lenin's death as the new leader of the Soviet Union, contrary to Lenin's wishes. He quickly implemented plans for the forced collectivization of agriculture, rapid industrialization, and a huge military buildup. These policies were made possible by a reign of state terror that led to millions of deaths. After repelling the Nazi invasion of World War II, which killed 20 million more Russians, Stalin was able to establish a hegemony over most of Eastern Europe that lasted nearly half a century before disintegrating.

Under Stalin, the Russians are a dangerous opponent. They are capable of aggressive expansion, but may fall behind in the development of cities and technology.

Frederick (Germans): Frederick William II, known as The Great, ruled Prussia for nearly fifty years. Displaying unexpected qualities as a leader and decision maker, he became one of the great generals of history and made Prussia the dominant military power of Europe. He also promoted important reforms at home, patronized the arts, and was a champion of religious liberty. He was considered the epitome of the enlightened monarch and warrior king.

Under Frederick, the Germans are very aggressive and a generally unpleasant neighbor. Keep a wary eye on them and don't hesitate if they let down their guard.

PLAYERS' NOTES

It is recommended that new players start at the Chieftain level of difficulty. Move on to the higher levels after you have had some experience. The highest level of difficulty, Emperor level, is only for the most experienced players and those looking for a very tough challenge. Winning at this level is very difficult.

First City: Your first critical decision when starting a new game is selecting the site of your first city. The sooner the site is selected, the sooner you can begin the growth of your civilization. You should be able to find a reasonable site within the first several game turns. If you take too long you may fall significantly behind your rivals.

The best squares for a city are Grasslands that show the resource symbol, Plains, and River squares. However, only some River squares have resources. If you start a city on a River square that doesn't, the city's early development will be slowed. This means starting your first city on a River square is somewhat risky.

City site selection is interesting at the start because you know so little about the surrounding area. If the immediate vicinity looks reasonable for a start, it is usually best to accept the site you start on. A reasonable area for a start would include a nearby river, special resources like the Horse or Game, or Grasslands that show the resource symbol. Remember that Jungles and Swamps can eventually be cleared and converted into productive terrain. Starting next to an Ocean is good to allow for future ship construction.

A bad city area would include several Deserts and Mountains. While some Ocean, Forests, and Hills squares are desirable, too many of these will restrict the growth potential of the city.

Defense of First City: The experience of our playtests indicates that it is most useful to build two Militia units immediately with your first city. When the first one appears, move it into the four adjacent map squares to the North, East, South, and West to discover the terrain your city can develop. Continue using this first Militia unit to further explore the nearby area. When the second Militia unit appears, fortify it in the city for defense.

A high priority thereafter, especially if you find or suspect nearby rivals, is to acquire Bronze Working so that at least one Phalanx unit can be put in the city for defense. Two Phalanxes are recommended for defense, especially in cities on the edge of your empire.

Expansion: After your first city is started and you are exploring nearby terrain, begin planning the placement of your next and future cities. Look for good sites sufficiently distant from your capital so that the overlap of areas cities can develop is minimized or prevented. This allows each to grow to its maximum.

Settlers are very important early on as they are needed to found new cities, build roads, and irrigate. Plains terrain is useful to irrigate under Despotism, as are Grasslands and Rivers when you are about to change to a Monarchy. Most of your early cities should have a Settlers unit in existence doing work of some kind. If it founds a new city, have the home city build another Settler. Granaries are very helpful for early cities because they allow them to produce more Settlers units and still grow at a reasonable speed.

It is generally useful to expand as fast you can. Keep producing Settlers units and send them to good city sites that your military units have discovered. A side benefit of expansion is that you push back the wilderness from which barbarians can appear.

Guns Versus Butter: Keep in mind most of the great civilizations of history were built by military conquest, and your rivals are going to be somewhat aggressive. You must be prepared at least for defense, if not conquest yourself.

It is possible to succeed as a relatively peaceful builder, but you will need to build up your economy with extensive trade routes and stay ahead in technology to discourage attack. Advance your government to Monarchy, and perhaps The Republic or Democracy, as soon as you can.

Technology Priorities: Keep the Civilization Advances Chart (found at the back of this manual) handy. Examine this chart before playing and have some plans for which advances you wish your scientists to pursue. As time passes, the direction of your technology research may be adjusted according to strategic considerations. Each advance that can be studied at the start presents an opportunity and leads on to other useful knowledge.

Pottery makes the Granary improvement available and this speeds the growth of cities. Bronze Working introduces the Phalanx unit, which is good for city defense. Horseback Riding introduces Cavalry, which is a good offensive unit and is useful in exploration because of its movement factor of 2. The Wheel introduces the Chariot, an excellent offensive unit with an attack factor of 4 that is useful if a rival is found nearby. Ceremonial Burial, the Alphabet, and Code of Laws are useful to quickly develop a more effective government.

If you find yourself on a small island or continent, acquiring Map Making will be useful because it allows construction of Triremes, the first ship units. If you are not engaged in war and thus able to concentrate on economic development, acquiring Monarchy will allow you to change your government to one more favorable for growth. If war is likely, then the Wheel, Masonry (City Walls), and Mathematics (the Catapult) are useful. Writing introduces Diplomats, which are needed to establish embassies with rivals. Trade introduces the Caravan, which is economically important.

Wonders of the World: As you get more experienced with managing a civilization you will become more aware of how the various Wonders can be of benefit. Read through the descriptions of the Wonders and consider how each one may be useful. Some have economic benefits, some aid your diplomacy, and some speed the acquisition of technology. Attempt to build those that best suit your strategy. Keep in mind that the benefits of most of the early Wonders eventually expire.

Carefully consider when to build Wonders. There may be times when a Wonder would be useful, but other things such as Settlers, Aqueducts, or City Walls are more valuable for growth or defense. Wonders take a long time and many resources to build. Once construction of a Wonder has started, finish it as soon as possible so that a rival doesn't complete it first. Take advantage of the ability of Caravans to contribute to the construction of a Wonder.

Don't forget that the benefits of many Wonders accrue to the civilization that possesses it. It may be cheaper to capture an enemy city that has built a Wonder than to build it yourself.

Changing Governments: The ability to judge the best times to make changes of government will come with experience. The type of government that is most useful at any one time depends on your economic and strategic situation. Because changing governments throws you into anarchy and is thus costly, plan changes carefully.

Despotism is most useful during wartime and expansion (founding new cities), but can restrict the advance of technology and growth (populations). Because most existing units do not require resource support, new units, improvements, and Wonders can be built relatively quickly. Settlers units only require one food unit, so each city can still support one or two that can be used to found new cities, build roads, irrigate farmland, and mine resources.

Once your cities have been spread out and are reaching a size of 7 or higher, consider switching to a Monarchy. This is most useful when you have irrigated Grasslands and Rivers because these areas can now produce 3 food units per square. This translates into faster growth and larger populations. This in turn generally means more trade, reasonable technology advance, greater resource production from mines, and more economic power. Although all units now require resource support, it is still very possible to conduct military campaigns.

Communism is similar to Monarchy but may be more useful later when your cities are larger. Because under Communism corruption stays at the same level regardless of the distance of cities from your capital, this government is useful for far-flung empires.

As your cities get larger, it is harder to keep them happy. Also, with the passage of time, each advance takes longer to acquire. Switching to the Republic or Democracy may be useful after your cities grow beyond 10 people because these governments substantially increase trade. The increased trade converts into more luxuries for making large populations happy, more taxes for maintaining city improvements, and more technology research. Democracy eliminates corruption, further increasing the benefits of trade.

The trade-off is that war is difficult to conduct as a Republic or Democracy because each unit away from its home city creates one or two unhappy citizens. This makes it very difficult to conduct large military campaigns. Democracy or the Republic may not be a good choice if you are fighting or planning a major war unless you can acquire the Women's Suffrage Wonder.

War Versus Peace: Long and costly wars can significantly slow your growth, but wars can also be very useful for hampering rivals, capturing cities, and devastating enemy economies. Although war is often forced upon you, there will be many opportunities to make war as you choose. When to go to war depends on your strength, your enemy's strength, the threat an enemy poses, the desire to contain an enemy's expansion, and where you stand in technology. Prepare for war as much as you can before attacking, and attempt to achieve your goals quickly.

A technological advantage is quite useful in war, but only if you have built the better units and brought them to bear. You may encounter rivals who have a lead in technology but have built only a few units. Because they have concentrated on advancing, they may not be prepared for war. Technological advantage is

especially useful at sea, because having better units there makes it easier to sink enemy ships that are often loaded with additional units.

If you are not prepared for war when an enemy appears on your frontier, it is often best to meet demands for technology or tribute, at least temporarily, so that you can move forces to the threatened area. Be wary of accepting large bribes to enter a war that you are not prepared for.

Once you have established a strong economy and identified your major rivals, it is often useful to stay at war with them until they are destroyed or ruined, or peace is forced on you by your Senate. While at war, restrict the movement of enemy ships carrying ground units, sinking all you can. In addition, wage economic war by landing units to pillage irrigation and mines to slow enemy growth and production.

It can be very difficult to capture cities that are well-defended behind City Walls. Diplomats sent into the city on a sabotage mission may get lucky and destroy the walls, making the attack easier. Also, Bomber and Artillery units ignore City Walls. Battleships and Bombers are useful for destroying defenders inside coastal cities that may thereafter be captured by invasion.

A Strong Economy: As your civilization matures and your cities grow, it becomes increasingly more difficult to generate the money needed to maintain improvements and the luxuries the larger populations demand to stay happy. Large quantities of money for improvement maintenance and luxuries for population happiness, as well as the scientific research that must continue, can be generated by large amounts of trade, city improvements, and Specialists.

The best way to improve the strength of your economy is to increase trade by establishing trade routes with large cities of other civilizations. Attempt to establish the maximum three trade routes allowed for each of your larger (10+) cities. It is nearly impossible to build a strong economy without extensive trade routes. At the local level, you can put Ocean, Gem, or Gold Mine squares in development on a city map to increase trade. This normally means, however, that people are not at work elsewhere generating food and resources.

City improvements are useful for increasing tax revenues (Marketplaces and Banks) and research (Libraries and Universities). Taxes may also be increased by Taxmen. Science may be increased by Scientists.

Diplomats: New players may tend to overlook these units but more experienced players recognize their value. Establish an embassy with each of your opponents as you encounter them. This is the major value of Diplomats. Embassies help you plan diplomacy and strategy by revealing the power of rivals. Diplomats can also be useful for looking inside enemy cities that you may attack and for their other abilities described in the manual.

Take every opportunity to destroy rival Diplomats. This can prevent the theft of technology or other unpleasantness.

Variable Strategies: Be prepared to tailor the strategy of your civilization to circumstances that arise. The two major options are peaceful economic development versus militaristic expansion. From the moment play begins, you will be gathering more information that helps plan your strategy. Important factors to be considered are the size of the island or continent that you first settle, the proximity of rivals, their strength, and their technological development.

If you begin isolated on a reasonably sized continent that can hold ten or so strong cities, then a strategy of economic development is promising. In this case look to change your government to Monarchy and then Democracy as soon as possible. If the continent is huge and inhabited by one or more rivals, then you must prepare for eventual war to ensure sufficient expansion and to defend against attacks that are sure to come. If you begin on a small island or continent, then prepare for expansion overseas.

When several rivals are found on the same continent, attempt to carve out as much of the territory as you can. Use Militia units to screen off enemy units and make peace with everyone, at least to start. Peace may allow you to trade for technology faster than you can otherwise obtain it. Establish embassies when you can and identify the neighbors you plan to destroy. Don't bother establishing trade routes with weaker neighbors that you plan to conquer, especially those on the same continent.

When the time is right, attack and destroy one rival at a time. Be prepared ahead of time and attempt to end the war as soon as possible.

The suggestions listed above cover only a few highlights of the tactics and strategies developed while Civilization was designed and tested. As you play, expect to discover many additional stratagems that improve the success of your civilizations.

DESIGNERS' NOTES

The main inspiration for Civilization was the success and reception of Railroad Tycoon. We were very pleased with how Railroad Tycoon worked and began looking for a suitable topic to which we could apply some of its better concepts. Thinking back, we can't recall now what triggered the idea of making the new game about the history of civilization, but once the topic arose, it quickly became obvious that it fit our specifications.

The central concept to Civilization was that it was to be a "god game," casting the player as the hero and ruler of a civilization over the course of its history. In this role he would guide and build his civilization, watching it grow and expand, rise or fall. As play proceeded the player could see the results of his decisions unfold and success would hinge on his relative skill.

We also wanted Civilization to require the decision maker to juggle several balls at once. We found in Railroad Tycoon that this helped keep the challenge and interest high. As Sid sketched out the basic design, he evolved the various hats the player would wear.

Clearly he would be the military commander, moving his armies against rivals. A second role was that of economic planner. Wearing this hat, the player would plan the placement, growth, and production of cities. The player would have to decide between "guns or butter," producing military hardware or economic enhancements for his civilization.

The player would also have to decide upon the direction of research for new knowledge. This again would often be a guns or butter decision, as some advances improved internal conditions and others made the military more potent. The player would have to judge which avenue of research was most useful at any one time, and be prepared to change if conditions warranted it.

As design work continued, additional player roles were added. He would have to conduct his own diplomacy. By keeping track of rivals through the reports of his advisors, the player would have to make judgments on whom to appease, whom to attack, whom to make friends, and whom to ignore. In addition, the management of each city was made more complex, forcing the player to spend more time to keep his cities efficient and stable.

With all of these duties falling to the player, we felt that we had come up with a mix of interesting decisions that would keep the player challenged, and result in a game that was fun and addictive.

Another major concept that we wanted to borrow from Railroad Tycoon was the variability of worlds that made every game different. This worked very well, as in the previous game, making the play fresh each time.

We also decided early on to include the hidden map. We found that this contributed significantly to the fun and interest of play. Another feature that Sid developed was the Civilopedia, the on-line encyclopedia of game concepts. We thought this would especially help new players.

Most of these game features were in place in a rough form by the end of the winter of 1990-1991. Thereafter work proceeded mainly by the trial and error process of coding, testing, reviewing, and re-coding. Through the spring and summer a new version appeared every day or so, and the design became more refined. We made adjustments in the list of technology advances, we juggled their relationships, we made changes in the types and values of military units, we adjusted the time length of turns, we curbed the danger presented by barbarians, and, most critically, we continually improved the artificial intelligence of the rival civilizations.

Among the interesting features that didn't make the final cuts were ocean minefields that could be laid by Ironclads; alcoholic beverages (proposed by some as a major impetus for the first permanent settlements); Solar Power Plants; Fighter-Bombers 8-8-8(32); the Super Highways Wonder that speeded road building; Charlemagne, king of the Franks; and a much more detailed spaceship.

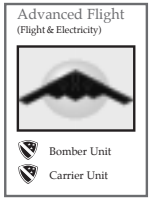
The most important feature that went in as the game neared completion was the concept of trade routes established by Caravans. This helped with the generation of knowledge and the establishment of strong economies. It also encouraged exploration and diplomacy.

Also important was the home city concept, especially under the Republic or Democracy. Originally, military units cost $2 maintenance each under these governments, then only $1 if they were fortified or on sentry duty. When military units caused unhappiness instead, this seemed to work more as one would expect. It became more difficult to wage war under these governments and provided an interesting trade-off for the improved economic performance.

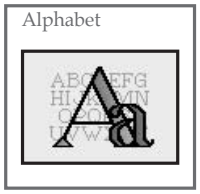
The last major feature to be included was the Space Race. We had tossed around several ideas for ending the game but eventually returned to space, one of the earliest ideas. Reaching another planet with colonists from Earth made an excellent culmination for the history of humankind on our planet.

Like Railroad Tycoon, Civilization has been a great project to work on. In fact, important work has often been delayed because it was so much fun to play. Civilization has proven to be extraordinarily popular with our colleagues here at MPS Labs, and that's a good sign. With so many cool features and interesting decisions, plus an endless supply of new worlds, we are certain that Civilization is the last game you'll ever need. But, just in case you disagree, we'll start on something new as soon as this one goes out the door.

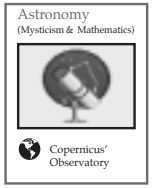
Sid Meier
Bruce Shelley
September 11, 1991



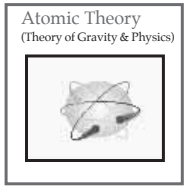
PAGE 7



PAGE 8



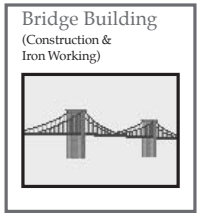
PAGE 9



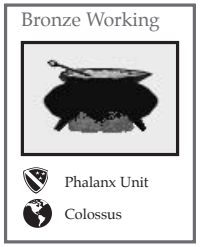
PAGE 10

PAGE 11

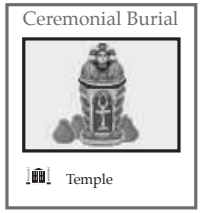
PAGE 12



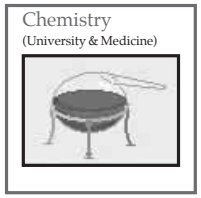
PAGE 13



PAGE 14

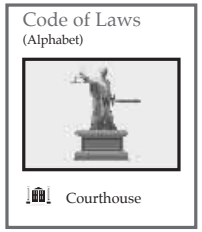


PAGE 15



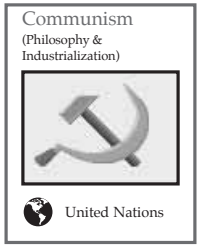
PAGE 17

Page 19

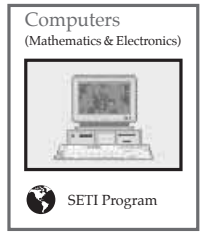


Page 20

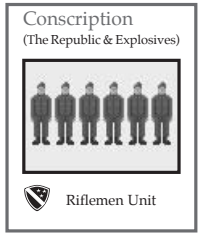
Page 21



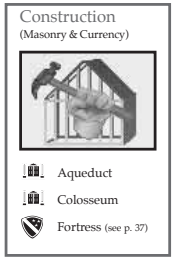
Page 22



Page 26



Page 35

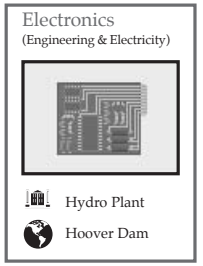


Page 36

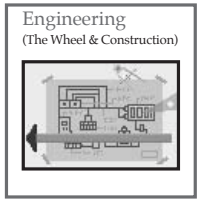
Page 38

Page 39

Page 40



Page 41



Page 42

Page 43

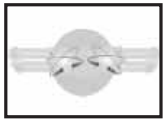
Page 44

Flight
(Combustion & Physics)

Fighter Unit

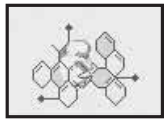
Page 45

Fusion Power
(Nuclear Power & Superconductor)



Page 46

Genetic Engineering
(Medicine & The Corporation)



Cure For Cancer

Page 47

Gunpowder
(Invention & Iron Working)

Musketeers Unit

Page 48

Horseback Riding

Cavalry Unit

Page 49

Industrialization
(Railroad & Banking)

Transport Unit

Factory

Women's Suffrage

Page 54

Invention
(Engineering & Literacy)

Page 55

Iron Working
(Bronze Working)

Legion Unit

Page 56

Labor Union
(Mass Production & Communism)

Mech. Inf. Unit

Page 59

Literacy
(Writing & Code of Laws)

Great Library

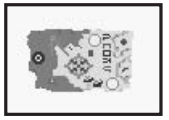
Page 62

Magnetism
(Navigation & Physics)

Frigate Unit

Page 64

Map Making
(Alphabet)



Trireme Unit

Lighthouse

Page 65

Masonry

Palace

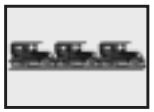
City Walls

Pyramids

Great Wall

Page 67

Mass Production
(Automobile & The Corporation)

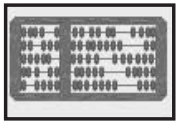


Submarine Unit

Mass Transit

Page 70

Mathematics
(Alphabet & Masonry)



Catapult Unit

Page 72

Medicine
(Philosophy & Trade)

Shakespeare's Theater

Page 77

Metallurgy
(Gunpowder & University)

Cannon Unit

Page 78

Monarchy
(Ceremonial Burial & Code of Laws)

Page 79

Mysticism
(Ceremonial Burial)

Oracle

Page 80

Navigation
(Map Making & Astronomy)

Sail Unit

Magellan's Expedition

Page 81

Nuclear Fission
(Atomic Theory & Mass Production)

Manhattan Project

Page 83

Nuclear Power
(Electronics & Nuclear Fission)

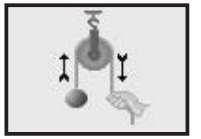
Nuclear Plant

Page 85

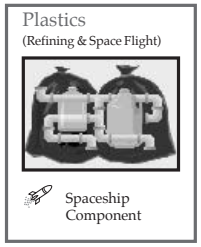
Philosophy
(Mysticism & Literacy)

Page 86

Physics
(Mathematics & Navigation)



Page 87

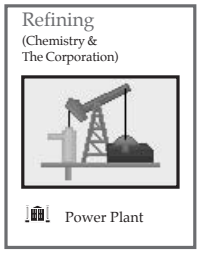


Page 88

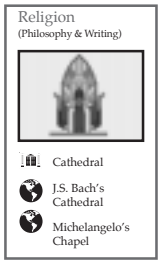
Page 91

Page 92

Page 93

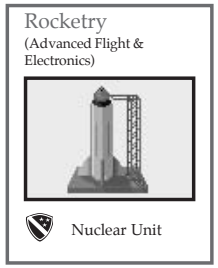


Page 99

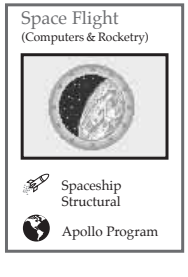


Page 111

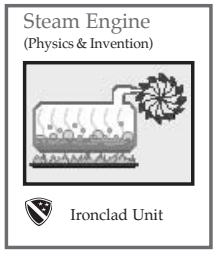
Page 112



Page 113

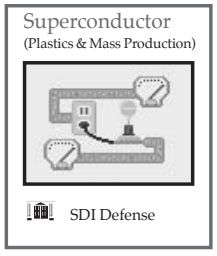


Page 114

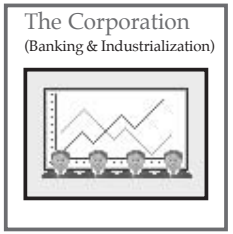


Page 115

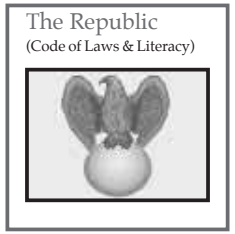
Page 116



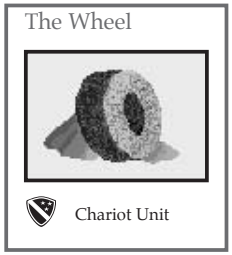
Page 117



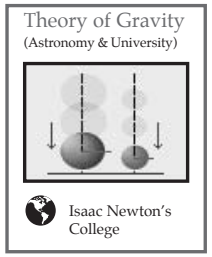
Page 118



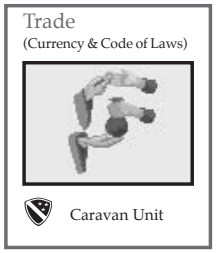
Page 119



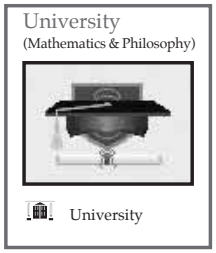
Page 120



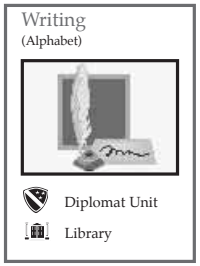
Page 121



Page 122



Page 123



Page 124

Game Design
Sid Meier
with Bruce Shelley

Original IBM Programming
Sid Meier

Original IBM Computer Graphics
Michael Haire
Harry Teasley
Barbara Bents
Todd Brizzi
Stacey Clark
Brian Martel
Erroll Roberts
Nicholas Rusko-Berger

Original IBM Music Compositions
Jeffery L. Briggs

Civilopedia
Bruce Shelley
B.C. Milligan
Jeffery L. Briggs

Original IBM & Tandy Sound Effects
Ken Lagace
Jim McConkey
Scott Patterson

Documentation
Bruce Shelley

Editors
B.C. Milligan
Paul Murphy

Manual Design
Susan Ullrich
Iris Idokogi
Joe Morel

Manual Layout
Terry Rund
Cesar Novoa
Gary T. Almes

Illustrations
Laurie Baker
Manual Graphics
Susan Ullrich
Terry Rund

Package Design
Moshe Milich

Original Version

Quality Assurance
Al Roireau
Chris Taormino
Tim Train
Chris Clark
Mike Corcoran

Additional Playtesting
Arnold Hendrick
Sandy Petersen
Jim Synoski
Scott Patterson
B.C. Milligan
Doug Whatley
Paul Murphy

Questions, problems, need technical support, updates, demos? Contact us by voice, fax, mail, email,bulletin board, or via the World Wide Web.

The MicroProse Game Hint Line

Stuck, stumped? Help is at your fingertips

(900) 773-HINT U.S. only
(900) 451-3546 Canada only

MicroProse USA

Attn: Customer Support
2490 Mariner Square Loop
Alameda, CA
USA 94501
(510) 864-4550
(510) 864-4602 FAX
(510) 522-8909 BBS U.S.
email: support@microprose.com

MicroProse UK, Europe

Attn: Customer Support
The Ridge
Chipping Sodbury
Bristol
England, UK, EU
BS37 6BN

ph - 44-(0)1454-893-900
(10:00-12:30 & 13:30-16:00 GMT)
FAX - 44-(0)1454-894-296
(09:00-17:30 GMT)

UK BBS (14,400 baud)
44-(0)1454-327-083
44-(0)1454-327-084

MicroProse Germany

MicroProse-Spectrum HoloByte GmbH

Markstrasse1
33602 Bielefeld
Germany, EU

Yon Montags bis Freitags
49-(0)1805-252-565
FAX: 49-(0)1805-252-564
(1400-1700 CET).

GERMANY BBS
49-(0)5241-946-484
(28,800 baud, 2 Lines)
email: service@microprose.de

MicroProse Investor Relations

Attn: Investor Relations
2490 Mariner Square Loop
Alameda, CA 94501
email ir@microprose.com

CompuServe

email 76004,2223 or microprose_europe@compuserve.com

Visit us at GO GAMBPUB
Internet Email
support@microprose.com
(English)
service@microprose.de
(Deutsch)

FTP Site

ftp.microprose.com

We welcome your feedback on this site. Please send comments to:

webster@microprose.com

!For product, technical or customer support questions send email to:
support@microprose.com.